FAA Aviation News

SAFETY FIRST FOR GENERAL AVIATION

Balloon Fiesta from the Ground Up

September/October 2008
Volume 47/Number 5

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Launching Dreams

Energizing the Next Generation

Small is Beautiful

Where There's Smoke

What Not to Learn

What Not to Burn

About the cover: *This photo shows just one of the many nontraditional shape balloons that decorate the skies at the Albuquerque Balloon Fiesta®. Mario Toscano photo*

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Jumpseat

JAMES J. BALLOUGH
DIRECTOR, FLIGHT STANDARDS SERVICE

We Are Here to Help You

You may have heard the expression, "I'm from the government and I'm here to help you." It is often followed by a chuckle, since some might ask, "How can a regulator be helpful?" Yet, we must be helpful, since our top goal is improving safety and saving lives. We do this by using every tool we can, including developing and enforcing regulations, but equally important tools include education and training, technical assistance, information sharing, and working together.

This issue's "Jumpseat" highlights FAA resources that can help you fly more safely. We provide a baseline through requirements for receiving your pilot and medical certificates and, of course, through regulations, but we also promote safer operations through a host of products and activities.

Learning to Fly

The first step, which you've likely passed, is deciding to become a pilot. A section on the FAA Web site provides some of the basics, but if you're thinking about taking up flying or know someone who is, great sources are the Aircraft Owners and Pilots Association's (AOPA) Learn to Fly Web site and the Be a Pilot site, which is co-sponsored by AOPA and the General Aviation Manufacturers Association (GAMA).

On the Pilot Training section of the FAA Web site, you will find the *Pilot's Handbook of Aeronautical Knowledge*. It provides an introduction to the broad spectrum of knowledge you will need as you progress in your pilot training. A number of other handbooks on airplane flying, amateur-built aircraft, glider flying, and more, are available as well.

One of the most important resources is the *Aeronautical Information Manual* (AIM). This manual provides basic flight information, as well as information about air traffic control procedures in the U.S. National Airspace System. It also contains items on health and medical facts, on factors affecting flight safety, as well as a pilot/controller glossary of terms used in air traffic control.

Preflight

We wrote in the last issue about the importance of getting a preflight weather briefing from 1-800-WX-BRIEF. In this issue, we include an article (see page 19) on Temporary Flight Restrictions (TFR), which restrict airspace for several reasons, including air shows, forest fires, and presidential/VIP movements. This information is available at 1-800-WX-BRIEF and is also in graphical form on the Internet.

This issue's "Checklist" column (see page 22) explains how FAA reaches out to the aviation community to spread the word about important safety issues. One tool is a Safety Alert for Operators (SAFO), which alerts, educates, and makes recommendations to air carrier certificate holders, fractional ownership program managers, and flight training centers. Another tool—Information for Operators (InFO)—contains information for operators to help them meet administrative or regulatory requirements with relatively low urgency or affect on safety.

Continuing Education

Another point we stress in *FAA Aviation News* is continuing education. There are always ways to improve your proficiency. Improving safety is also the number one objective of the FAA Safety Team, or FAASTeam, which uses a coordinated effort to target causes of accidents and then focus efforts on addressing those causes. FAASTeam members perform a host of outreach activities, such as conducting seminars and providing training. There is also an online Aviation Learning Center on the FAASTeam Web site.

Yes, we are from the government and we are all here to help you.

Online Resources for Pilots

Becoming a pilot:
http://www.faa.gov/pilots/become/
http://www.aopa.org/learntofly/index.html
http://www.beapilot.com

Pilot training:
http://www.faa.gov/pilots/training/

Pilot's Handbook of Aeronautical Knowledge:
http://www.faa.gov/library/manuals/aviation/pilot_handbook/

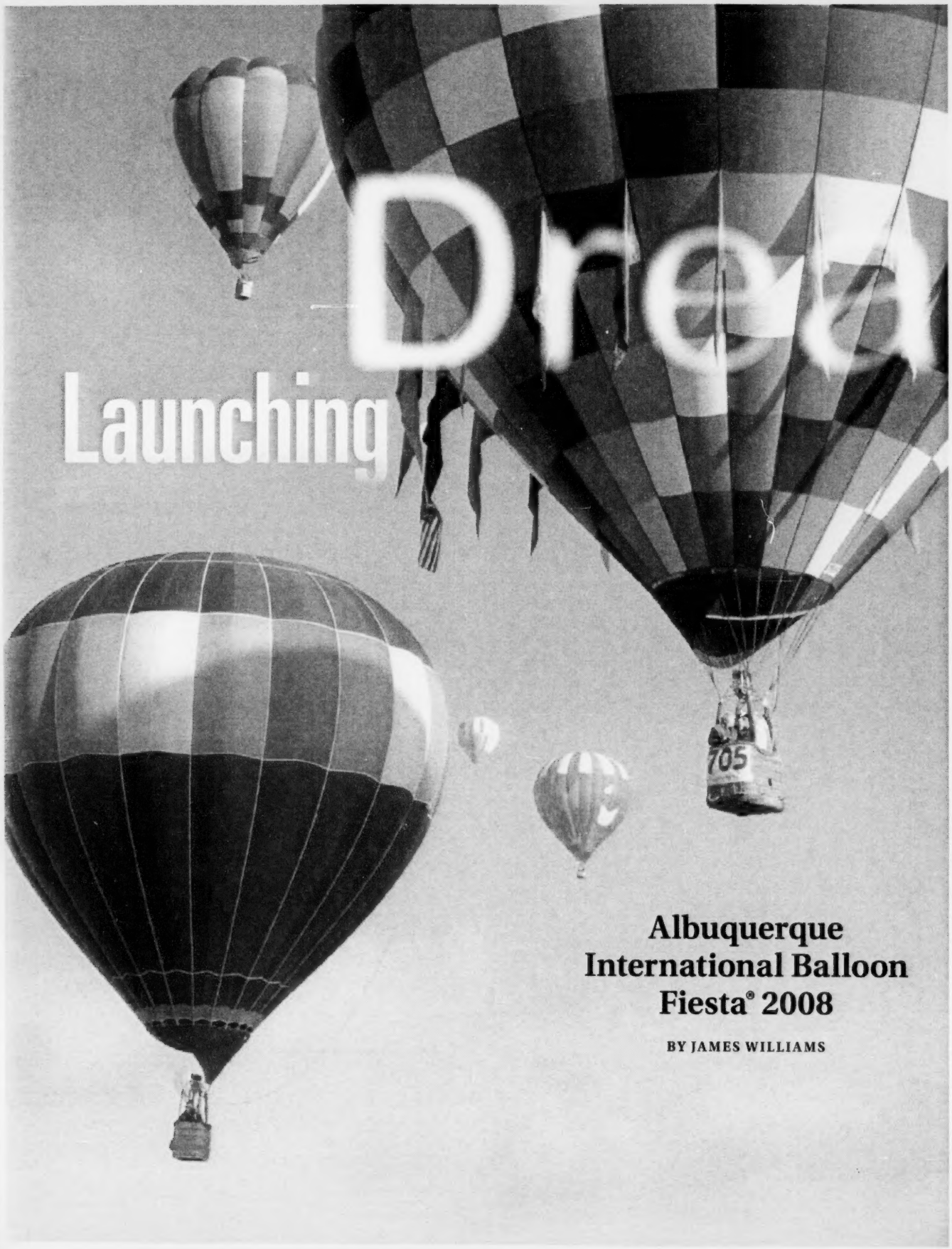
Selection of handbooks:
http://www.faa.gov/library/manuals/aircraft/

Aeronautical Information Manual:
http://www.faa.gov/airport_airtraffic/air_traffic/publications/atpubs/aim/

Graphical TFRs:
http://tfr.faa.gov/tfr2/list.html

FAA safety information (InFO) and alerts (SAFO):
http://www.faa.gov/safety/

FAA Safety Team:
http://www.faasafety.gov



Albuquerque International Balloon Fiesta® 2008

BY JAMES WILLIAMS

Mario Toscano photo

Ask most people when the aviation age began, and you're likely to hear about the Wright brothers at Kitty Hawk in 1903. Actually, human flight started 120 years earlier (1783, to be exact), when two Frenchmen traveled five miles in a hot air balloon invented by the Montgolfier brothers.

Today, one of aviation's most picturesque events, the annual Albuquerque International Balloon Fiesta®, celebrates aviation's beginnings each October in Albuquerque, New Mexico. This event also illustrates how far the lighter-than-air category has evolved from the simple shape and wood-fire "propulsion" system that carried the Montgolfier balloon aloft over 18th century France. In 21st century New Mexico, by contrast, more than 800,000 visitors will delight in watching 1,000 pilots and crews launch about 650 balloons in an astonishing range of sizes, colors, and shapes.

Coupe Aéronautique Gordon Bennett

This year—Balloon Fiesta's 37th year—will offer visitors the additional treat of watching the launch of the 52nd Coupe Aéronautique Gordon Bennett Gas Balloon Race. First held in 1906, this race is a competition to see who can fly the farthest. Each member country (of the World Air Sports Federation, http://www.fai.org/) may nominate up to three teams to participate. Because it is customary for each year's race to take place in the home country of the previous year's winning team, the race has not been flown in Albuquerque since 2005. The 13th America's Challenge Gas Balloon Race will launch immediately following the Gordon Bennett. It, too, is a long distance race and the qualifier for the U.S. teams to participate in next year's Gordon Bennett race.

In Albuquerque, the FAA is out in force to support the Balloon Fiesta.

FAA's Participation

The evolution of aviation has necessarily led to regulation, even for balloons. Plans to hold last year's Gordon Bennett Gas Balloon race in Belgium were regrettably cancelled due to lack of clearance from the Belgian aviation authorities. In Albuquerque, however, the FAA is out in force to facilitate and support not only the race, but also the entire Balloon Fiesta. For instance:

Mario Toscano photo

Although not as colorful as their hot air counterparts, gas balloons are also an important part of the Balloon Fiesta. This year both the Gordon Bennett and the America's Challenge gas balloon races start from Balloon Fiesta Park.

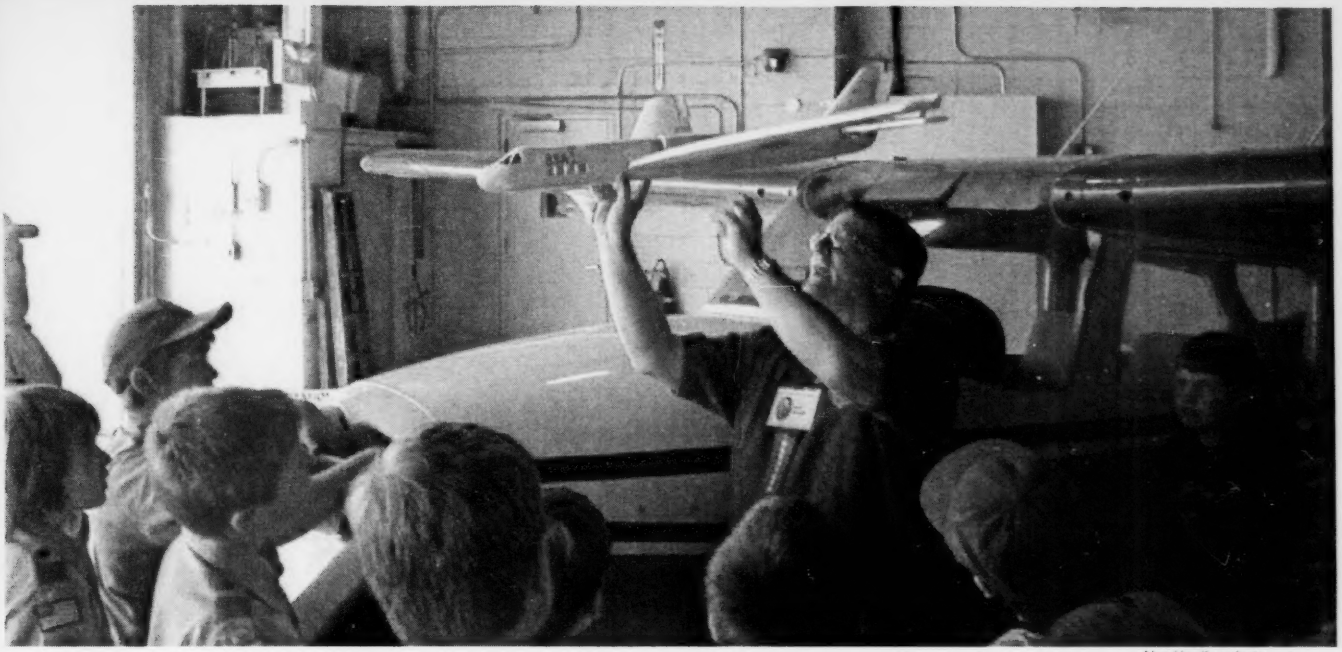
- The Albuquerque air traffic community (Center, Approach/TRACON, Tower) works closely with Balloon Fiesta organizers to implement a TFR (Temporary Flight Restriction) and to coordinate the closure and release of airspace for the various events during the Balloon Fiesta.
- Albuquerque Flight Standards District Office (FSDO) inspectors will be on-site at Balloon Fiesta Park to provide event surveillance and to address pilot certification and balloon airworthiness issues.
- The Albuquerque Automated Flight Service Station (AFSS), operated by Lockheed Martin under an FAA contract, staffs a remote site at Balloon Fiesta Park to provide pilot weather briefings and other services to both hot air and gas balloon pilots.
- The FAA Safety Team (FAASTeam) will be on-site to conduct daily balloon-specific safety seminars and to offer safety information and advice.

If you are going to Balloon Fiesta this year, enjoy the aerial sights and make sure you bring plenty of "film" for photos—you'll want it!

James Williams is a Technical Writer-Editor in Flight Standards Service's General Aviation and Commercial Division. He is also a pilot and a ground instructor.

2008 Balloon Flying Handbook

The FAA also supports the balloon flying community by developing guidance materials. Whether you're a long-time balloonist or someone who is considering this form of aviation, check out the 2008 version of the FAA's *Balloon Flying Handbook* (FAA-H-8083-11A). This handbook introduces basic knowledge and skills essential for piloting balloons. It includes information on balloon flying proficiency, including maneuvers and procedures, and can also help commercial balloon pilots who are teaching balloon students how to fly these aircraft. You can find the handbook online at www.faa.gov/library/manuals/aircraft/media/Balloon%20Flying%20Handbook.pdf



Alan Harding photo

Energizing the Next Generation

Youth Aviation Adventure

CHRISTINE MURAKAMI

On a windy Saturday in April of 2008, the Ohio State University Airport (OSU) welcomed over 250 participants to the 23rd semi-annual Youth Aviation Adventure (YAA). Ranging in age from 10 to 18, the participants enjoyed a full day of engaging in hands-on activities designed to spark an interest in aviation. Held each spring and again in the fall, YAA lets participants rotate through ten "stations" that cover preflight inspection, aerodynamics, powerplants, airport operations, and the instrument panel.

YAA participants can interview aviation professionals, such as a commercial pilot, a helicopter pilot from the Columbus Police, and an emergency rescue worker from OSU Airport's fire station, and they can compete in "Aviation in the Know," a game show-like review of general aviation terms. The final station—intended as a culminating event—lets participants construct a glider from a foam plate and hold flying competitions for speed, distance, and accuracy. Boy Scouts who finish the program can earn a complete merit badge, and YAA partially fulfills requirements for three different Girl Scout badges. Adaptations are currently underway to complete one Girl Scout badge.

Build It...

The YAA program soars today because of Dan Kiser and Steve Wathen, two pilots whose dedication launched its takeoff roll in 1997. At that time, Kiser and Wathen offered to help the son of a friend and nine of his troop mates earn the Boy Scout Aviation merit badge. This initial modest effort evolved and grew into the nonprofit (501(c)(3)) Youth Aviation Adventure, which hosted a record 477 young people in 2006.

That year marked a course change for YAA. Since the original group could no longer accommodate the number of participants who wanted to attend, the YAA board decided to facilitate the expansion of the program to cities across the country. To achieve this goal, a group of YAA volunteers worked

The standardized ten-station YAA program offers clear guidelines to potential program sponsors and organizers.

The YAA program soars today because of Dan Kiser and Steve Wathen, two pilots whose dedication launched its takeoff roll in 1997.

with The Ohio State University's P-12 Project (a liaison between OSU and local schools) to refine the program, create a formal curriculum, and distribute it to interested groups. Thanks to this effort, plus volunteer YAA Webmaster Lenny Mack's work in posting the curriculum online, the standardized ten-station YAA program offered clear guidelines to potential program sponsors and organizers. To download the curriculum guides, or for more information, the YAA Web site is http://youthaviationadventure.org/.

...And They Will Come!

Once the materials became public, interest in hosting YAA programs took off all over the country. One early supporter was the FAA's Alaska Region Aviation Education Program Manager, Angie Slingluff. Slingluff offered a program near Anchorage, Alaska, in the spring of 2007 that was based on adapted YAA materials, and then sponsored a full-blown YAA program at Palmer Airport in June 2008. In September of 2007, Sporty's Pilot Shop in Batavia, Ohio, held a YAA event for 100 participants and has since scheduled a second program. Oklahoma's Shawnee Airport hosted a YAA program during the spring of 2008 on the city's newly declared "Youth in Aviation Day." The city of Toledo, Ohio, recently held a YAA program at the Toledo Express Airport. Additional YAA "squadrons," as they are called, are planned in Scottsdale, Arizona, and a possible program in Australia will take YAA into the international arena.

Collaboration and Cooperation

In addition to creating interest in aviation, the YAA program fosters collaboration among various groups in its Ohio birthplace. For example, Columbus's EAA Chapter 9 schedules and organizes a Young Eagles flying day to dovetail with YAA, allowing both programs to benefit from greater participation. Local flying clubs donate airplanes for use with preflight and aerodynamic lessons. Under the leadership of the airport director and his staff, OSU's Airport Operations takes care of everything from chairs and tables to extension cords, projectors, and pushing planes. In addition, 50 people volunteer their time to organize the day, staff the stations, and make sure participants have a great experience.

Start your own YAA Program

The YAA's mission is to introduce young people to the exciting world of aviation, unraveling the wonder and mystery of flight in a high-quality, engaging, educational program. Because of its success, the YAA program recently earned a Certificate of Recognition from the FAA. FAA National Aviation Education Program Manager Sheila Bauer hopes to see others sponsor YAA programs to help spark an interest in aviation. Today's youth are our future.

Christine Murakami is the assistant director for Ohio State's P-12 Project.

Alan Harding photo

Small is Beautiful

FAA's Small Airplane Directorate

PETER ROUSE

James Williams photo

Whether you're flying an American Legend *Cub* or a Cessna *Citation* kitted out with the newest synthetic vision avionics systems, you can be sure that the FAA's Small Airplane Directorate in Kansas City, Missouri, has had a hand in your aircraft's life cycle. The Directorate's 280 dedicated and talented employees—60 in the Kansas City main office and 220 in its 17 field offices—are collectively responsible for the certification of gliders, airships, and balloons, as well as for all airplanes that fall under Title 14 Code of Federal Regulations (14 CFR) part 23. (*Note: Part 23 deals with airworthiness standards for normal, utility, acrobatic, and commuter category airplanes.*)

A Big Role in Small Airplanes

Notwithstanding the name, there is nothing "small" about the role that the Directorate plays in the development and continued airworthiness of general aviation aircraft at all points on the performance and size spectrum. The Small Airplane Directorate has several key functions:

- Provide administrative support and resource management for the Directorate field offices.
- Develop type certification policies and regulations for small airplanes, airships, and balloons, and ensure standardized application of the policies and regulations.
- Administer type certification of small airplanes, airships, and balloons in field offices outside the Directorate.
- Monitor continued airworthiness information and process airworthiness actions for small airplanes, airships, and balloons.

Now, let's take a closer look at these functions, and how they might impact you as a general aviation aircraft owner or pilot.

Type Certification Policies and Regulations

The Small Airplane Directorate's Standards Office develops the regulations, policy, and guidance for FAA approval of a wide variety of products, ranging from Light Sport Aircraft (LSA) to commuter category jets or, as employees like to say, "from J-3s to jets." The *Cub*, most famously known as the J-3 *Cub* when produced by Piper

There is nothing "small" about the role the Small Airplane Directorate plays in the development and continued airworthiness of general aviation aircraft.

Aircraft in the 1930s, has been reintroduced as an LSA, and several manufacturers are producing jet aircraft under 14 CFR part 23.

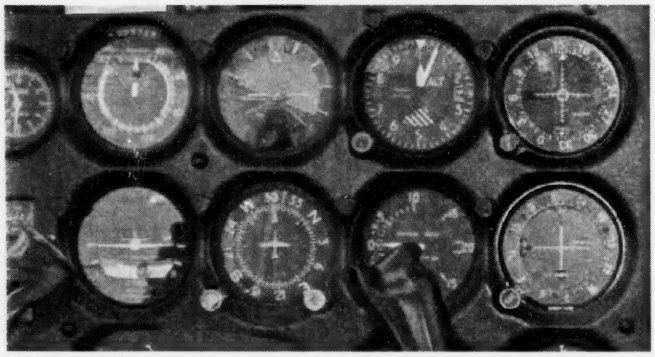
In conjunction with this role, the Small Airplane Directorate was instrumental in developing everything from the consensus standards used in the certification of Light Sport Aircraft to policy and guidance for the certification of 14 CFR part 23 jet aircraft, more commonly known as "very light jets," or VLJs. In fact, a prime example of the Directorate's role is the exemption that allowed jet aircraft to be certificated under part 23 commuter category, since the commuter category was originally limited to propeller-driven aircraft.

If you own or fly an aircraft of foreign design and/or manufacture, you may be interested to know that the Small Airplane Directorate is the part of the FAA which issues approval of small airplanes, gliders, and balloons designed and manufactured in other countries.

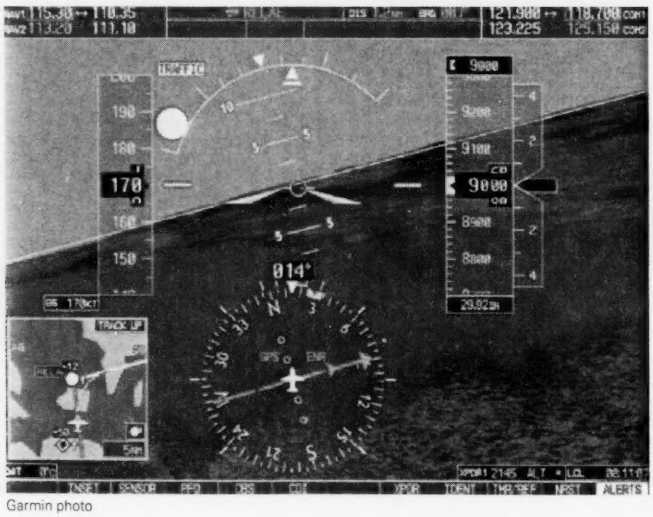
The Small Airplane Directorate's work also touches every pilot who flies with new avionics technologies, because its responsibilities include continuous development of the policy and guidance to recognize and facilitate installation of new technologies into small airplanes. For example, the Directorate has been instrumental in the use of inflatable restraints (air bags), ballistic recovery parachutes, and diesel engines in small airplanes.

Here's another current example. Imagine you are flying in the clouds, under instrument flight rules, to an airport that has mountains all around. The ability to visualize the terrain and have increased situational awareness would be of tremendous value. Luckily, your aircraft is equipped with synthetic vision, which is one of the most exciting new developments in aviation today. The Small Airplane Directorate has worked extensively with NASA to develop the policy and guidance for installation of this technology, which literally "paints" a picture of what is in front of the airplane (terrain, obstructions, etc.) for the pilot to see on the primary flight display. While the electronic Primary Flight Displays (PFD) now making their way into the general aviation (GA) fleet have been in transport category airplanes for some time, it was the small airplane world that blazed the path for synthetic vision displays.

Aircraft instrument displays have evolved from the "steam gauges" to the electronic Primary Flight Displays. The new avionic displays can vastly increase situational awareness.



James Williams photo



Garmin photo

Field Offices & Geographic Responsibilities

The Small Airplane Directorate's main office is located in Kansas City, Missouri. The 17 field offices include four Aircraft Certification Offices (ACO), seven Manufacturing Inspection District Offices (MIDO), one Manufacturing Inspection Office (MIO), one Military Certification Office (MCO), and four Manufacturing Inspection Satellite Offices (MISO).

In addition to its duties for small airplanes, the Directorate has a geographic area of responsibility (*see illustration*) that includes 21 states—from the Dakotas to the Carolinas and from Alaska to Florida. The Directorate has life-cycle responsibilities for almost everything that flies in this geographic area: Transport category airplanes, helicopters, gliders, balloons, piston engines, turbine engines, avionics, propellers, and a variety of components and subsystems that cover the spectrum of aviation from gears to Gulfstream 650s. In this role, the Small Airplane Directorate deals with products from initial certification, manufacturing, repair and overhaul, and continued operational safety (COS). The Directorate also works with applicants ranging from small modification shops to well-known manufacturers such as Cessna, Cirrus, Garmin, General Electric, Gulfstream, Hawker-Beechcraft, Mooney, Piper and Williams International, to name a few.

To sum it up: We may be the Small Airplane Directorate, but we love everything that flies!

Peter Rouse is an FAA engineer. He is also a 1,700-hour pilot and a Certificated Flight Instructor (CFI). He has flown aerobatics in competition and is an active member of the International Aerobatic Club. He is featured in this issue's "FAA Faces" column.

Aircraft Certification Service

The Small Airplane Directorate falls under the FAA's Aircraft Certification Service, which is the part of the FAA responsible for administering the safety standards governing the design, production, and airworthiness of civil aeronautical products. The Aircraft Certification Service also oversees design, production, and airworthiness certification programs to ensure compliance with prescribed safety standards.

The Aircraft Certification Service is organized into the Office of the Director and four divisions located at our Washington, DC, Headquarters and four geographic directorates, one of which is the Small Airplane Directorate. The Aircraft Certification Service headquarters offices and the directorates share responsibility for the design and production approval, airworthiness certification, and continued airworthiness programs of all U.S. civil aviation products.

For more information, see the Small Airplane Directorate's Web site at http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/air/directorates_field/small_airplanes/.

Where There's Smoke...

BOB CASTLE

If I could offer every pilot just one piece of safety advice, it would be to know your aircraft systems and emergency procedures cold. That's because emergencies can get hot in a hurry, as I learned a few years ago during a flight from Texas to Oklahoma. The owner of a Piper PA-28-161 *Warrior* had asked me to pick up three passengers in Texas and return them to Oklahoma City for the weekend. En route to Rockwall, Texas, where I was to meet the passengers, I had to pick my way through a cold front with associated heavy rain showers and isolated thunderstorms. I ultimately diverted to McKinney, just northeast of Dallas. But the excitement really began during our Visual Flight Rules (VFR) flight back to Oklahoma City. As you will see, I found reasons during the trip home to be grateful for every scrap of training, knowledge, and good habits acquired over the years.

An Uneventful Flight

As dictated by safety and good training, I did a thorough preflight inspection and took care to give my three passengers a briefing. To keep weight and balance within limits, I seated my 38-year-old female passenger in the right-rear seat, with her five-year-old son in the left-rear seat. I directed the 15-year-old female passenger to the right seat in front, and showed her how to open the door. She asked why, and my flip response was, "well, just in case." Little did we know.

We departed Texas at 8:42 p.m., estimating an hour and 45 minutes en route. I requested and received VFR traffic advisories from Air Traffic Control (ATC). Meanwhile, my passengers entertained themselves with a portable DVD in back and a portable CD player in front. The air was clear and smooth as we climbed to our en route altitude of 4,500 feet mean sea level (MSL). What could go wrong?

Maintaining control of the airplane was our only hope of survival.

Suddenly Flashing Lights

For a time, nothing did go wrong. The flight was uneventful until shortly after we crossed the Red River into Oklahoma. The instrument panel lighting suddenly dimmed momentarily and then returned to normal. I had flown this particular airplane at night on two previous occasions, but had never seen this behavior. There were no other symptoms, and all instruments, including the ammeter, had normal indications. We cruised on for several more minutes and then it happened again. Only this time I heard a "popping" noise from behind me. I asked the adult rear-seat passenger if her son was doing anything that might cause the instrument lights to dim. She didn't think so, but turned off the DVD player. Although the lights dimmed momentarily again once or twice more, the instruments showed nothing amiss. We flew on.

About 30 minutes from our destination, the adult passenger informed me she smelled something burning and that "it's getting hot back here." I had all the fresh air vents fully open that warm July evening. There was plenty of cool air flowing towards the rear of the cabin and I hadn't noticed any unusual smells. But within seconds of her announcement, I, too, could smell a burning odor.

Training Takes Over

Here's where those years of training on emergency procedures took over and kicked into high gear. I immediately declared an emergency with Oklahoma City Approach Control stating that I had fumes in the cockpit. The next step was to reduce the electrical load by turning off non-essential electrical equipment, navigation radios, and the number two comm radio.

As I took these steps, the controller offered a vector to Purcell, Oklahoma—directly ahead, but eight miles away. I turned to the heading and began a descent while the controller asked for the number of people and fuel on board. He was unsure whether the airport was lighted or not, and I asked for the CTAF (Common Traffic Advisory Frequency). I already had my sectional chart open to our position, and grabbed my flashlight—thankfully nearby and filled with good batteries—to read airport data for Purcell. Keying the mike on the CTAF frequency did not activate the lights—I later learned that they were not pilot-controlled—so I went back to ATC to check on other options.

Reprinted with permission from *The Purcell Register*
John D. Montgomery photo

Meanwhile, the adult passenger in back got my attention with "I can see light!" I glanced back and, though I initially didn't notice anything unusual, I then spotted a small, orange dot, centered on the lower right-rear seat cushion. As I watched, it grew rapidly as flames burned through the leather seat material.

I immediately informed ATC that we had an onboard fire, and the controller responded with new bearing and range information to the airport. I searched vainly for the airport that was now only five miles ahead. With open flames in the cabin, though, I knew I had to get the airplane on the ground without delay. I glanced at the interstate highway barely two miles off the right wing. I could see heavy traffic moving both north and south along the heavily traveled road connecting Oklahoma City and Dallas. It certainly wasn't my first choice for an emergency landing and I thought to myself, "Even if we land safely, we could get clobbered from behind by an 18-wheeler."

Road to Survival

While I pondered this issue, my rear-seat passenger told me she had a cup of water and wondered if she should pour it on the fire. Realizing it was probably an electrical fire, I knew it wasn't the best idea. As we were running out of options, though, I told her to go ahead. The flames diminished for a moment, but were soon burning brightly again. I reduced power further and turned to head towards the highway, just as the controller made the same suggestion. Since I couldn't locate the airport at Purcell, the interstate was my best chance of getting safely on the ground—heavy traffic or not.

At this point, my main concern was avoiding overpasses. I advised the controller that I would land on the northbound lanes. This put me into the wind,

Federal Aviation Administration

Passenger Safety Briefing
Checklist

___ **S** Seatbelts fastened for taxi, takeoff, and landing.
Shoulder harnesses fastened for takeoff and landing.
Seat position adjusted and locked in place.

___ **A** Air vents (location and operation).
All environmental controls (discussed).
Action in case of any passenger discomfort.

___ **F** Fire extinguisher (location and operation).

___ **E** Exit doors (how to secure; how to open).
Emergency evacuation plan.
Emergency/survival kit (location and contents).
Equipment (location and operation).

___ **T** Traffic (scanning, spotting, notifying pilot).
Talking ("sterile cockpit" expections).

___ **Y** Your questions? Speak up!

Cessna Photo

going with the flow of traffic. As I turned to line up with the highway, I brought in the first notch of flaps. I made a final call to the controller, who advised that emergency services had been notified and wished me luck. Then, I turned off the rest of the electrical equipment and continued our descent into the darkness.

A highway bridge loomed ahead, so I reduced the rate of descent to get over it and then extended full flaps as I reduced the power to idle. I touched down on the centerline of the northbound lanes at a higher than normal airspeed and applied maximum braking. As the airplane slowed, I steered to the right to keep any vehicles from ramming us from behind. Miraculously, we had landed between traffic, and we managed to avoid hitting or being hit by any other vehicles.

We were down, but the fire still raged inside. As the prop spun to a stop, the cabin immediately filled with dense, choking smoke. My right-seat passenger was having difficulty with the door, so I reached across her and, after fumbling with the latches myself, got the door open. My rear-seat passenger was frantically trying to free her son from the seatbelt and get him from the burning airplane. I reached over my seatback to assist.

I don't recall seeing them exit the aircraft, but I suddenly realized I was alone in the plane. That's when I decided it was time for me to get out, too. I pulled off my headset, unbuckled my seatbelt, and dove for the door, rolling off the leading edge of the wing. Once on the ground, I realized I still had my kneeboard strapped to my leg. As I accounted for all my passengers, two men approached to render assistance. Several trucks had pulled over in front of the now furiously burning aircraft. One of the men lent me a cell phone and I called the only number I could think of—1-800-WX-BRIEF—to report our emergency landing with all aboard safely accounted for. The flight service specialist took the information, hesitated, and then asked if I wanted to close my VFR flight plan. Even at the time, it was funny . . . I laughed and replied that he should close it for me.

Emergency vehicles arrived within two minutes of our landing and, though the aircraft cabin was completely consumed by fire, our only injuries were some smoke inhalation and a few scrapes.

Lessons Learned? Plenty!

Fly the airplane! I have to give credit to the flight instructors who trained me to fly the airplane first. An onboard fire is obviously very distracting, but I knew that maintaining control of the airplane was our only hope of survival.

Maintain proficiency. Proficiency is more than minimum currency. If you're only doing three takeoffs and landings every 90 days, challenge yourself. Find a good flight instructor and go practice some of the maneuvers and procedures that we don't normally do on cross-country flights from Point A to Point B.

Know your aircraft systems and emergency procedures. A thorough understanding of your aircraft is vitally important. Knowing the airplane and its systems gave me the tools I needed to improvise solutions and make decisions.

Use ATC services. On cross-country flights, I either file IFR (Instrument Flight Rules) or ask for VFR flight following. This practice helps with traffic avoidance, but the controller is also a valuable person to have along. When I needed help, it was only a mike click away. The controller not only helped with suggestions on possible landing sites, but he also got the emergency equipment rolling in our direction. Talking with him on the phone afterwards, I learned that the airplane rolled to a stop only two miles from the Purcell airport, but I honestly believe that we would have run out of time if I had tried to find it.

Keep a fire extinguisher charged and ready. We didn't have one in the *Warrior,* but it would have made a big difference. I won't fly without one now.

First, last, and always, the most important thing—fly the airplane!

Editor's Note: Dr. Tilton's "Aeromedical Advisory" column on page 18 includes important information on surviving smoke from inflight fires.

Bob Castle holds ATP and CFII certificates, and has logged more than 2,300 hours. He currently serves as commander of the Civil Air Patrol's Oklahoma Wing.

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FAASTeam CFI Workshops

JAMES W. LEAVITT

Need to renew your flight instructor certificate? Read on for a new option!

Beginning October 1, 2008, the FAA Safety Team (FAASTeam) will offer FAASTeam CFI Workshops. These workshops combine standardized "Core Topics" with subjects of local interest and will be held in all eight FAASTeam regions throughout the United States. This new program is dedicated to the enhancement of aviation safety and the support of aviation instructors and pilot examiners nationwide.

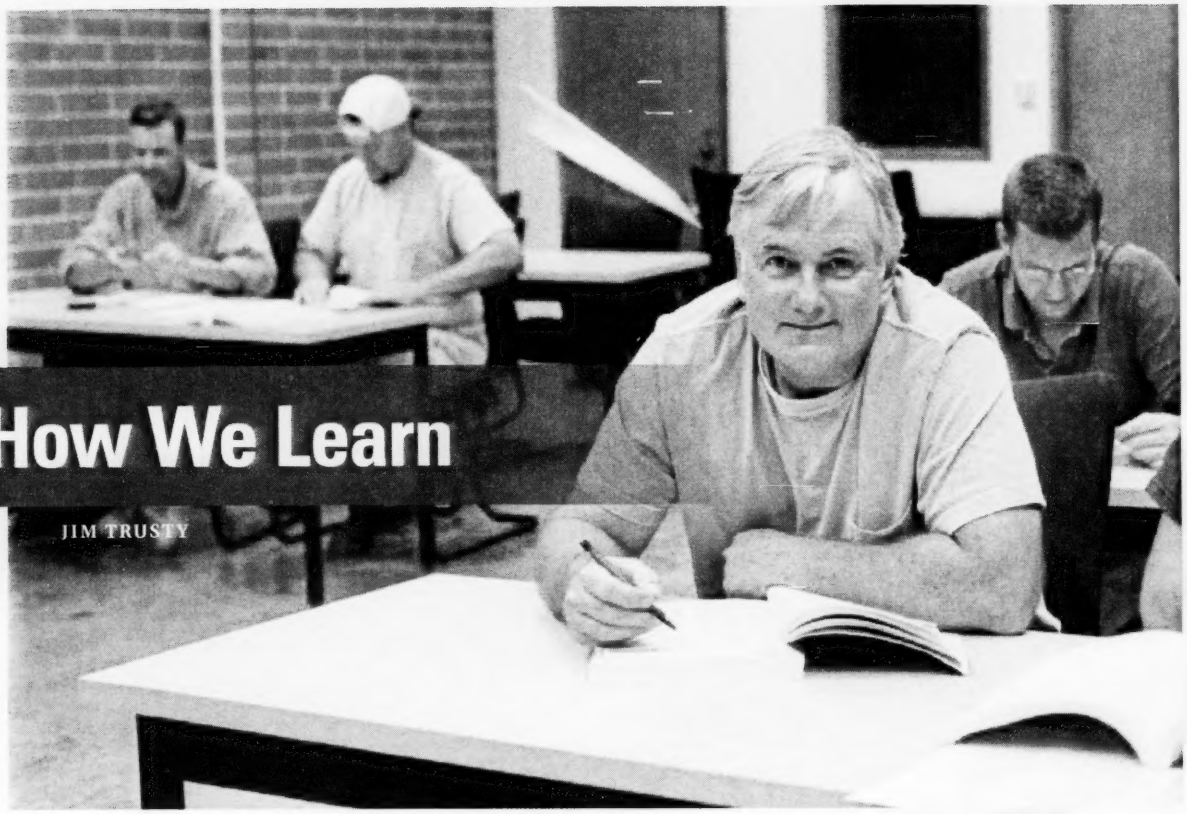
FAASTeam CFI Workshops focus on information that is of critical importance to those who provide pilot training and evaluation during the Airman Certification process. Certificated Flight Instructors, Ground Instructors, Designated Pilot Examiners, and Commercial Pilots, who are preparing to become CFIs, should attend. Each workshop will provide a segment dedicated to training and review of topics necessary for CFI renewal. The second segment of each workshop attendees can address and discuss local pilot training issues, accident causal factors, and items of local interest. It will be a meeting where participants can speak up, listen, and learn.

The FAASTeam Workshop format, schedule, and required topics will be the same around the country. Each area will have at least eight workshops over a two year period, one per quarter beginning on October 1. For example, during the months of October, November, and December, FAASTeam Workshop #1 will be presented from Maine to Alaska. The times and places will obviously be different, but the "Core Topics" and format will be the same. Then, during the first quarter of 2009 (January, February, and March), FAASTeam Workshop #2 will be presented. You will be able to attend any workshop at any location to receive credit towards the completion of the eight workshop series and to be eligible for CFI renewal. CFI renewal is a bonus for those CFIs who can attend all eight sessions in a series.

Times and locations of FAASTeam CFI Workshops will be available via the Safety Program Airmen Notification System (SPANS) at www.FAASafety.gov/. This will be an opportunity to work with DPEs, find out how to interpret requirements of the Practical Test Standards, and ask questions and compare notes with other CFIs. Participants can share what they know and, maybe, find out what they don't know. CFIs are the foundation of aviation safety. This is where CFIs can work together to improve the Aviation Safety Culture.

Please be on the lookout for the dates and plan to attend a CFI Workshop in your area this fall. Remember, working together we can make the biggest difference in aviation safety.

James W. Leavitt is a FAASTeam Program Manager in FAA's Eastern Region.



How We Learn

JIM TRUSTY

"How do we learn?" It seems like such a simple question, and it really should be. We have spent our entire lifetime learning one thing or another, so why suddenly should the inner workings of a flying machine pose a problem, or three, for us as pilots? If we investigate a little, we will find that some things came easy in the process and others never seemed to sink in. Do you ever wonder why?

Prior training and recent accomplishments reveal a lot about how each person learns, retains, and applies information.

It's the "HOW" that makes all the difference. Do you learn best by reading an instruction manual, watching a video or DVD, listening to an oral presentation, watching as someone else does the task, having someone walk you slowly through what is to be learned, or are you one of those who seem to grasp whatever is to be learned and just run with it?

Learning Styles

These are just a few of the ways we learn. Sometimes we mix and match to get the information. We all know that if the subject matter is fun or exciting, it suddenly becomes easier to absorb. To make the most of your learning, try to determine which process you use most of the time, or at least what you did to become a pilot. Personally, I need to see it done, write down the procedure, do it myself more than once, and add into the equation what I already know about the problem. Then, I am ready to do it.

As an instructor, I try to make good use of individual learning styles to get my points across. I interview students and try to discover what they have been doing since childhood to learn what they now know. Over and over, I have learned that prior training and education play a big role. Prior training and recent accomplishments reveal a lot about how each person learns, retains, and applies information.

Age is also a factor, but it affects each person in different ways. Apart from the inevitable physical issues that can arise with age, there are "cultural" differences that affect learning styles and preferences. Learning to use computers has been a challenge for me, for instance, and newer "glass cockpit" avionics may be difficult for students (or instructors) who don't use computers on a regular basis. Younger students who have grown up with electronic games and computers, however, have "naturally" acquired learning styles and skills that transfer quite easily to current aviation technologies.

What Works for You?

Whether you are an instructor or a student, one way to make the most of your teaching and learning efforts is to discover how you best learn. Start right now by discovering how you learn. If you are an instructor, think about how you have been teaching most of your students. If you are more of a visual learner, you may be unconsciously using visual methods to teach, even with students who learn better from the "hands-on" approach. If you are a student, talk to your instructor about your learning style. You are a customer as well as a student, so let the instructor know what you need. You'll both be better off.

Editor's note: The topic of this article, learning styles, is just one of the many concepts that have been added to the forthcoming revision of the FAA's Aviation Instructor's Handbook, *FAA-H-8083-9. The current handbook can be found at* http://www.faa.gov/library/manuals/aviation/media/FAA-H-8083-9.pdf/.

James E. (Jim) Trusty holds ATP, CFI, and ground instructor certificates. He was the 1997 National Flight Instructor of the Year and the 1995 and 2005 FAA Southern Region's Aviation Safety Counselor of the Year. He is a corporate pilot, Gold Seal flight and ground instructor, and an FAA Safety Team Lead Representative. Contact the author at Lrn2Fly@Bellsouth.Net

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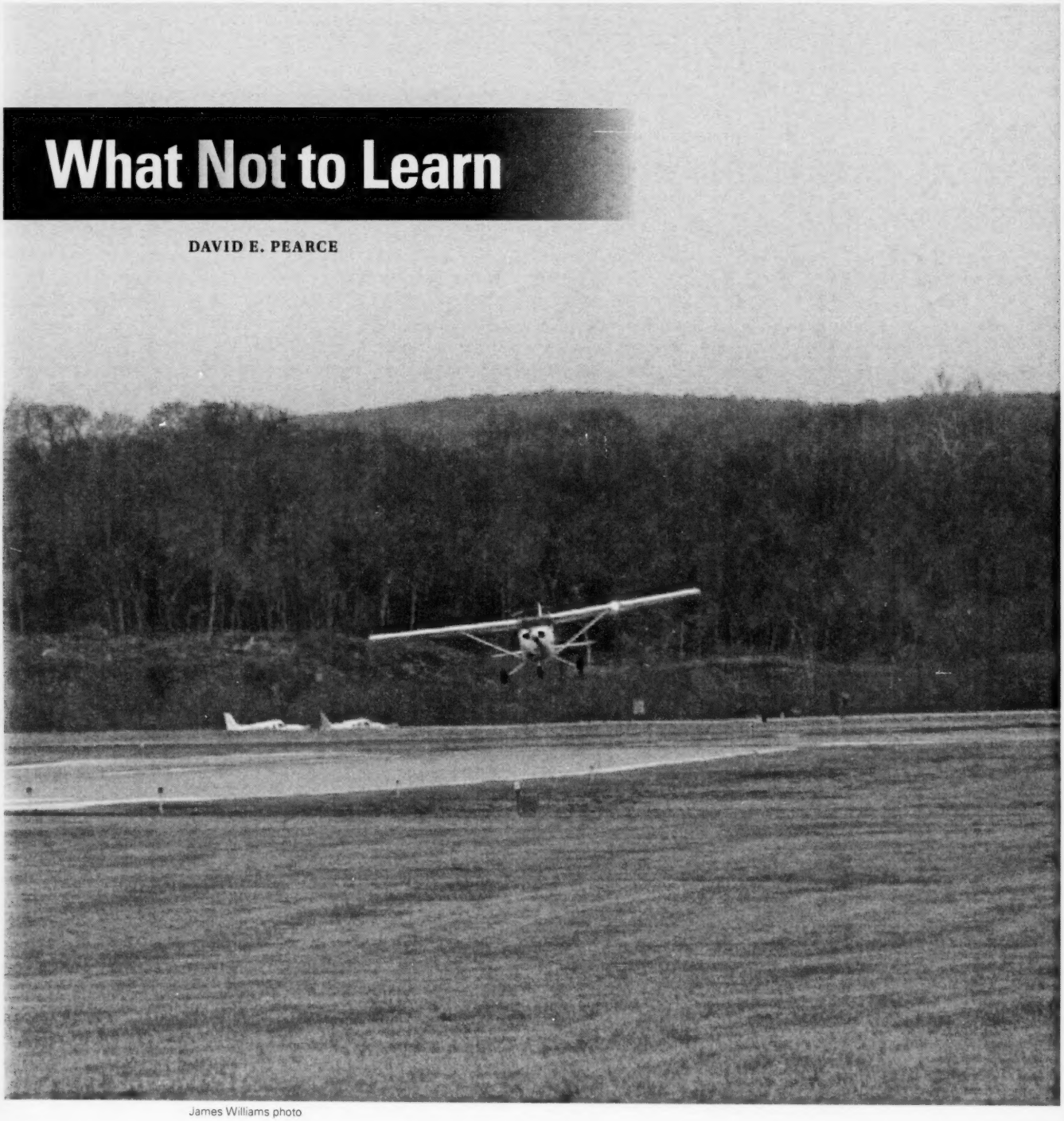
Do You Have Good Aviation Photos?
The FAA Aviation News is looking for aviation photos for use in upcoming issues.
Photo quality should be 6 megapixel or better, taken at best possible resolution.
For more information or to submit a photo, please e-mail: AviationNews@faa.gov.
Please include background information describing the photo.

What Not to Learn

DAVID E. PEARCE



James Williams photo

Like many designated pilot examiners (DPE) and certificated flight instructors (CFI), I have often heard the statement that a new certificate or rating—and especially a new private pilot certificate—is "a license to learn." In fact, I have often used that very phrase myself when I issue a temporary private pilot certificate to a freshly-minted aviator. After 50 years of flight instruction and 35 years as a DPE, however, I find myself rethinking the wisdom of that statement.

What?! You may be thinking that I'm crazy, or that I've finally achieved full status as an "old curmudgeon." Let me explain. What troubles me is how some new pilots seem intent upon learning through experimenting with airplanes or, as the military might phrase it, pushing the envelope. In my 50 years as a flight instructor, I have seen many push-the-envelope examples of what not to learn. In fact, I have accumulated more than 300 examples in the process of writing a book (still to be published) called *It Takes More than Skill*. Here are just a few:

What Not to Learn

How far can my airplane glide when it runs out of gas? Pretty scary...but the Aircraft Owners and Pilots Association (AOPA)/Air Safety Foundation notes that at least three pilots per week experience problems related to fuel mismanagement.

How do I exit an aircraft on its back, while hanging upside down in the safety belts? I always think here of the hapless pilot who attempted to land with a 47-knot crosswind—yes, that's right, 47 knots. The pilot in this case learned that an airplane with a maximum demonstrated crosswind component of 15 knots can be landed...but ground handling got complicated when he found a 47-knot crosswind component after taxiing off the runway. The wind got under the Cessna's left wing and lifted it up until it pointed vertically in the air. The right-hand wingtip pivoted like a ballerina, and the Cessna rotated about the wing axis until it pointed directly into the wind. Ballerinas can sustain that sort of balancing act, but Cessnas cannot. This airplane quickly wound up on its back, with its "feet" pointing to the sky.

What is the sound of an engine attempting to digest a slug of water instead of avgas? You do not want to hear firsthand how it stutters and stumbles, and you certainly don't want to learn how quiet the engine can be, if there's enough water to douse the combustion needed to keep you aloft.

How do you make a short-field landing on a wet grass strip that is much too short? I would rather pilots not learn through experimentation that the brakes just don't seem to work on wet grass.

Try These Instead

Solidify your new skills. The FAA has driven training by constantly upgrading the testing process—which is very different from how it was when I first began to instruct. Even though plenty of pilots, instructors, and DPEs make a sport of grousing about the testing and training processes, the reality is that pilots of today receive the training, education, and testing to be safe, competent pilots. So I basically want pilots to start out by practicing the things they already know.

Practice for perfection. In that connection, I want to see new pilots work to achieve high levels of proficiency with new skills. Perfection may be an elusive goal, but you'll get a lot better if you work toward the highest possible standard.

Learn with a pro. When it comes to expanding your repertoire, I fully agree that pilots at all levels should consider earning new certificates, ratings, and/or endorsements as a way to build skills and (safely) expand the utility of the aircraft. Aerobatic training (with a qualified instructor and a capable aircraft) is a great way to prepare for possible upset recovery. A competent instructor can help you practice your short- and soft-field takeoff and landings, stall and spin prevention and recovery, navigation, and new avionics. The list of possibilities is endless.

Most important of all, never stop learning!

David Pearce is a designated pilot examiner for the Washington (DC) Flight Standards District Office.

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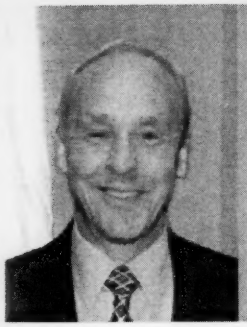


Aeromedical Advisory

FREDERICK E. TILTON, M.D.
FAA FEDERAL AIR SURGEON

Smoke Gets in Your Eyes

Even though flame-retardant materials and improved fire-extinguishing systems have made inflight fires a rare occurrence, Bob Castle's story on page 10 is a reminder that they *can* still happen. Extinguishing the fire obviously is first priority, but smoke inhalation is a very real danger. In fact, inhalation of the toxic gases in smoke is the primary cause of fatalities in most fires. Smoke gases do not need to reach lethal levels to seriously impair pilot performance. Knowing what to do is crucial, and the Civil Aerospace Medical Institute's (CAMI) pilot-education brochure on this topic is a great source of information. Here are the key points:

Smoke and Smoke Gases

The smoke composition and heat from a fire vary with the type of burning materials and environmental conditions. The two principal toxic-combustion gases from smoke are carbon monoxide and hydrogen cyanide. Irritant gases, such as hydrogen chloride and acrolein, are generated from burning wiring insulation and some other cabin materials.

Smoke Effects

For many reasons, smoke is bad news for pilots. Visual smoke can make it more difficult to escape, as Mr. Castle and his passengers discovered. Irritant gases can induce tears, pain, and disorientation. The toxic gases, carbon monoxide and hydrogen cyanide, can cause physical incapacitation and death. As you may remember from ground school, carbon monoxide combines with the hemoglobin in blood and interferes with the oxygen supply to tissues. Hydrogen cyanide inhibits oxygen utilization at the cellular level. Even relatively innocuous fire gases, such as carbon dioxide, can be harmful, because CO_2 increases the respiration rate, which can increase inhalation of other combustion gases. The decreased oxygen level in most fire scenarios compounds the problem of getting enough oxygen to maintain normal function.

Inhalation of the toxic gases in smoke is the primary cause of fatalities in most fires.

Survival

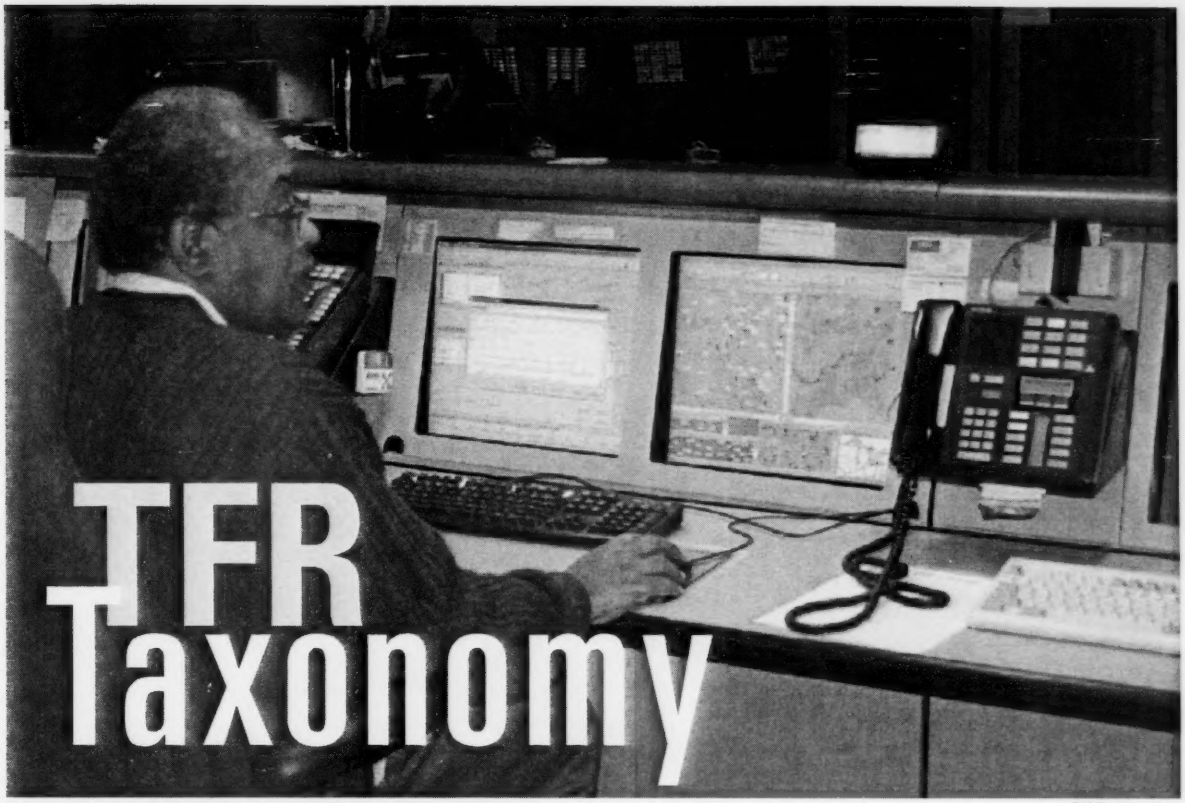
Planning the correct actions in advance will greatly increase your chances of survival, if you experience an inflight fire. Extinguishing the fire is obviously a top priority, so a small, handheld fire extinguisher should be standard equipment on your aircraft. If your aircraft does not have self-contained breathing masks, be sure that your equipment includes a cloth for each person on board. A cloth held over the nose and mouth can provide protection from smoke particulates. Wetting the cloth will allow it to absorb water-soluble toxic gases, such as hydrogen cyanide and hydrogen chloride, so bottled water should be another item for your on-board emergency equipment kit.

Another action to consider in advance is cabin venting. Venting will reduce the concentration of combustion gases, but remember that it may not be a viable option while actually fighting the fire.

For more information on this subject and other important topics, take a look at the CAMI brochures at http://www.faa.gov/pilots/safety/pilotsafetybrochures/.

Good health and safe flying!

Dr. Tilton received both an M.S. and a M.D. degree from the University of New Mexico and an M.P.H. from the University of Texas. During a 26-year career with the U.S. Air Force, Dr. Tilton logged over 4,000 hours as a command pilot and senior flight surgeon flying a variety of aircraft. He currently flies the Cessna Citation 560 XL.



TFR Taxonomy

When you are getting a briefing from a Flight Service specialist, be sure to ask for any NOTAMs that might affect your flight.

Clif Brooks photo

All pilots need to be especially alert to TFRs

SUSAN PARSON

No matter where you fly, security-related procedures and requirements are a fact of life for today's pilots. Although the FAA works closely with the Department of Homeland Security and other agencies to balance security requirements with the needs of the flying public, temporary flight restrictions (TFR) abound in the modern aviation environment. The upcoming presidential campaign season means that all pilots—especially those accustomed to operating under Visual Flight Rules (VFR) in Class E and Class G airspace—need to be especially alert to the existence of TFRs, including "rolling TFRs" that follow presidential and vice presidential candidates around the country. As a refresher, this article reviews the "taxonomy of TFRs" and provides information on where to look for up-to-date information on these restrictions.

TFR Basics

A temporary flight restriction is a regulatory action that temporarily restricts certain aircraft from operating within a defined area in order to protect persons or property in the air or on the

ground. TFRs are issued via the *Notices to Airmen* (NOTAM) system, and specifically by means of a Flight Data Center (FDC) NOTAM. The regulations define several different types of TFRs, but one thing is common to them all: Since TFRs are, by definition, "temporary" in nature, it is extremely important to check the FDC NOTAMs before every flight you make—even those in your home airspace.

Presidential TFRs

With the presidential campaign underway, chances are good that you will, at some point, be affected by TFRs issued under Title 14 of the Code of Federal Regulations (14 CFR) section 91.141, "Flight restrictions in the proximity of the presidential and other parties." This rule, which is also used to establish TFRs for the protection of presidential candidates, states that, "No person may operate an aircraft over or in the vicinity of any area to be visited or traveled by the President, the Vice President, or other public figures contrary to the restrictions established by the Administrator and published in a *Notice to Airmen* (NOTAM)." Not surprisingly, violation of a TFR issued under this regulation could lead to adverse consequences.

An official weather briefing is the best way to ensure that you get the most up-to-date information on TFRs that may affect your route of flight.

TFRs for cities hosting the national political party conventions (e.g., Denver and Minneapolis this year) are issued under 14 CFR section 99.7, which covers Special Security Instructions.

Special Event TFRs

Several different regulations permit the FAA to establish temporary flight restrictions for a variety of special events.

Air Shows and Sporting Events: For aircraft operations in the vicinity of aerial demonstrations and major sporting events, 14 CFR section 91.145 lets the FAA establish TFRs to protect persons or property on the ground or in the air, to maintain air safety and efficiency, or to prevent the unsafe congestion of aircraft in the vicinity of an aerial demonstration or sporting event. In practice, TFRs issued under 14 CFR section 91.145 are issued primarily for air shows. The FAA determines when a 91.145 TFR should be issued for a sporting event on a case-by-case basis.

FDC NOTAMs that establish TFRs follow a specific format. All begin with the phrase, "FLIGHT RESTRICTIONS" and include the following information:

- **Location of the TFR area**
- **Effective period**
- **Defined area**
- **Altitudes affected**
- **FAA coordination facility and telephone number**
- **Reason for the TFR**
- **Agency directing relief activities (if applicable) and telephone number**
- **Other information considered appropriate**

Stadiums: FDC NOTAM 3/1862, issued under 14 CFR section 99.7 on Special Security Instructions, restricts flight over stadiums during major league baseball, National Football League (NFL), National Collegiate Athletic Association (NCAA), and motor sport events. The so-called "stadium TFR" prohibits all aircraft and parachute operations at or below 3,000 feet above ground level (AGL) within a three-nautical mile (n.m.) radius of any stadium with a seating capacity of 30,000 or more people where an event is occurring. This TFR applies to the entire U.S. domestic national airspace system, and takes effect from one hour before the scheduled event time until one hour after the event ends.

Disaster/Hazard Areas: The FAA has authority under 14 CFR section 91.137 to restrict aircraft operation in designated areas, unless they are participating in disaster/hazard relief efforts. The three types of TFRs issued under this regulation serve to:

- Protect persons or property on the surface or in the air from a hazard associated with an incident on the surface [14 CFR section 91.137(a)(1)].
- Provide a safe environment for the operation of disaster relief aircraft [14 CFR section 91.137(a)(2)].
- Prevent an unsafe congestion of sightseeing or other aircraft above an incident or event which may generate a high degree of public interest [14 CFR section 91.137(a)(3)].

Space Flight: The FAA has authority under 14 CFR section 91.143 to issue FDC NOTAMs restricting flight in areas designated for space flight operations.

Before Every Flight

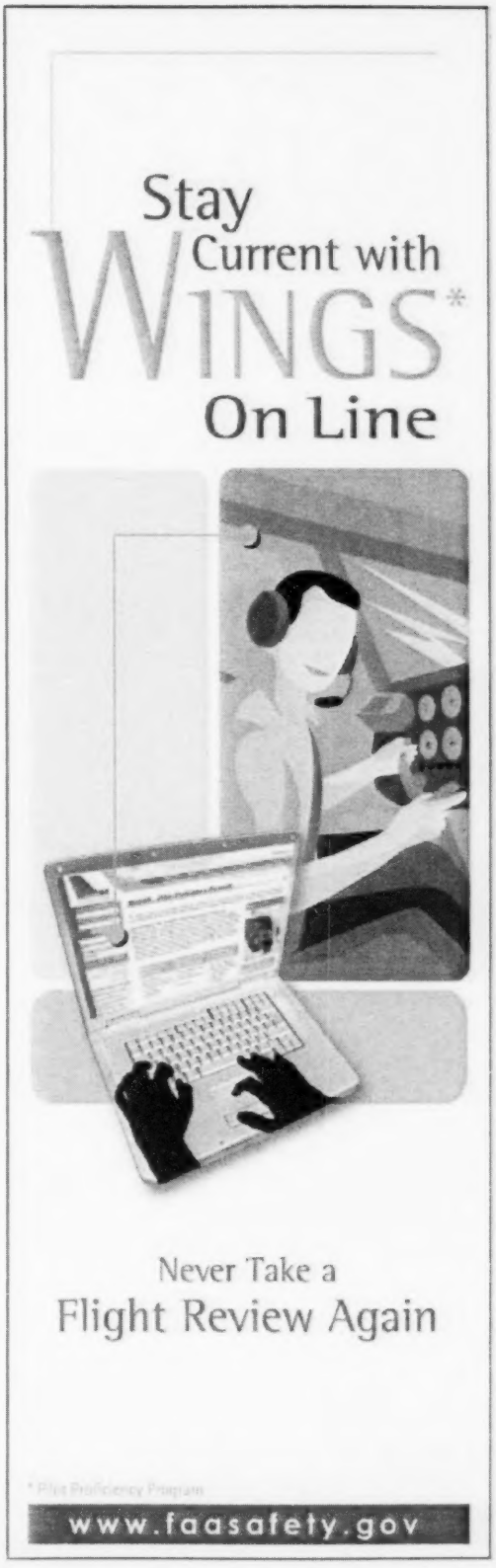
An official weather briefing from Lockheed Martin Flight Service (FSS) or one of the direct user access terminal (DUAT) vendors, DTC DUAT or CSC DUATS, is the best way to ensure that you get the most up-to-date information on TFRs that may affect your route of flight. You can also get graphical TFR information from the FAA's Web site at http://tfr.faa.gov/tfr2/list.html/. This site allows you to select the TFR information you need by scrolling through a list that includes the FDC NOTAM numbers. Alternatively, you can sort TFR data by date, state, or issuing air route traffic control center (ARTCC). As the name implies, the graphical TFR site also provides a graphical map of the affected area.

For detailed information on each type of regulatory TFR, you may want to review FAA Advisory Circular (AC) 91-63C, which includes recent changes to 14 CFR part 91. It can be found at http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/686111406576B32286256E8A0071CC0C?OpenDocument/.

Finally, consider taking one of the many online training courses on airspace. Through the course catalog at http://www.faasafety.gov/gslac/ALC/course_catalog.aspx?categoryId=11/, the FAASafety Team (FAASTeam) offers compact online courses that address TFRs and special use airspace, as well as a specific course on the Washington DC Air Defense Identification Zone (DC ADIZ). The AOPA Air Safety Foundation also offers several free online courses covering these topics at http://www.aopa.org/asf/online_courses/.

Preflight preparation is important for every flight, so remember to check for, and carefully review, any FDC NOTAMs that establish a TFR before attempting to fly in, or in the vicinity of, such restrictions.

Susan Parson is a Special Assistant in Flight Standards Service's General Aviation and Commercial Division. She is an active general aviation pilot and flight instructor.



SUSAN PARSON

Checklist

Safety Information

As you may have noticed from reading Bob Castle's account of an inflight fire (page 10) and Dr. Fred Tilton's tips for surviving smoke in the cockpit (page 18), preparation is key to coping successfully with an airborne emergency. Their advice is sound, but you may also want to take a look at an FAA resource—InFO number 08034—on the design and content of checklists for inflight smoke, fire, and fumes.

As Mr. Castle's experience demonstrated, events that produce inflight smoke, fire, and fumes often provide inconclusive or ambiguous cues during their early stages—and often leave very little time for action when the situation becomes clear. InFO 08034 (see link below) alerts the aviation community to the existence of a free template for developing a useful smoke/fire/fumes checklist, and a second document that includes concepts and terms. The InFO itself is a quick read (less than a page), but it includes links to these resources.

While we're on the subject of FAA resources, let me introduce you to the agency's online library of InFO and SAFO documents. Though aimed primarily at commercial operators, many of these products provide information that can also benefit general aviation (GA) pilots.

InFO

The above-mentioned document on developing a checklist for inflight smoke, fire, and fumes takes the form of an Information for Operators (InFO) message. By design, an InFO contains valuable information with relatively low urgency or impact on safety. Most InFOs also contain a recommended action to address the issue discussed in the message. The InFO is not a regulatory or mandatory document, but its goal is to help operators meet administrative or certain regulatory requirements. You can review the entire collection of InFOs on the FAA's Web site at www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/info/all_infos/. Here are a few that may be of special interest to the GA community:

InFO 07005: Taxi into Position and Hold (TIPH)—Guidance for Pilots

InFO 07008: Precipitation Reports from ATC—New Terms

InFO 07014: Flight Risk Assessment Tool

InFO 07018: Taxi Clearances: Know the Rules, Understand Your Clearance

InFO 08027: Approach Preparation: Preparing for an Instrument Approach as Backup

InFO 08038: Acknowledgement of Altitude Clearances and Altitude Read Back

SAFO

Another FAA resource is the Safety Alert for Operators, or SAFO. The SAFO is a tool that alerts, educates, and makes recommendations to the aviation community. Like an InFO, each SAFO contains important safety information and may contain recommended actions. The main difference is that while the content in InFO messages has relatively low urgency, the material covered in a SAFO is often time critical. The entire list of available SAFO messages is available online at www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/safo/all_safos/. Here are a few with particular relevance for GA pilots:

SAFO 06004: Approach and Landing Accident Reduction: Sterile Cockpit, Fatigue.

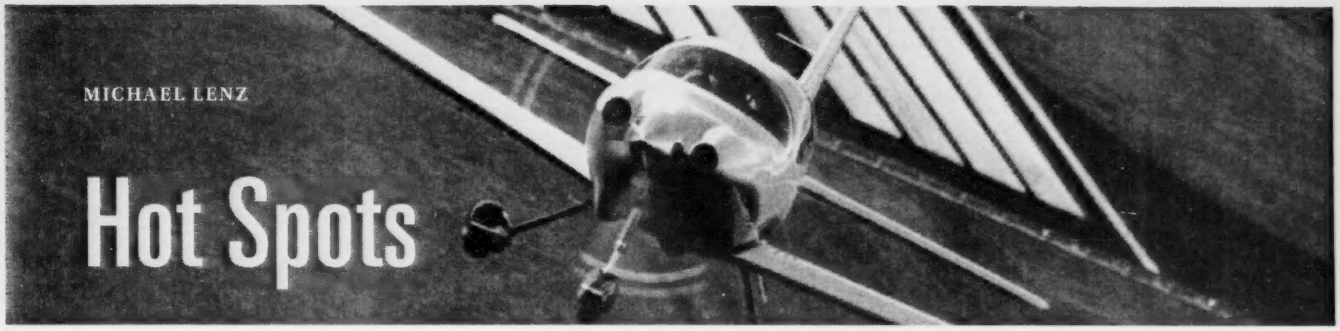
SAFO 07003: Confirming the Takeoff Runway

SAFO 07004: Garmin GPS-WAAS Models (GNS and GPS) 400W and 500W Series Units Determined Incompatible with Avidyne EXP5000 Primary Flight Displays.

SAFO 08013: Safety Recommendation Concerning Piper PA-23 and PA-31 Series Nose Baggage Doors

Take a look, and click around other parts of the FAA Web site while you are online. We have a wealth of information available to you, and we will introduce some of the agency's many other online resources in future editions of this column.

Susan Parson is a Special Assistant in Flight Standards Service's General Aviation and Commercial Division. She is an active general aviation pilot and flight instructor.



MICHAEL LENZ

Hot Spots

When Bad Things Happen to Good Pilots

FAA'S ENFORCEMENT DECISION TOOL

You walk to the mailbox on a beautiful day, but there is an unpleasant surprise awaiting you—a certified letter from the FAA. This one looks different from the usual mailings you receive as a pilot. You suspect it may not be good news and, unfortunately, you're right. It's a letter of investigation regarding a flight for which you were pilot-in-command (PIC).

You remember that flight, but that was more than a month ago, and you hoped it had been forgotten. Also, you filed an Aviation Safety Reporting System (ASRS) incident report (see page 24) within 10 days of the event. But even with the ASRS filing, a new chapter begins at this point. Like many general aviation (GA) pilots, you may decide to get advice from an attorney, an aviation advocacy group, or other pilots. After considering your options, you decide to admit the violation and take your lumps. You have had no violations before now, and your event was unintentional. You'll turn it into a learning experience, point out your years of flying without any violations or accidents, and move on. You just want to put it behind you. But what about the FAA?

How Does the FAA View It?

When violations occur, the FAA must take the action most appropriate to promote safety and compliance with the regulations. The initial priority of FAA inspectors who investigate such matters is to correct any ongoing noncompliance. FAA personnel then determine what action to take by evaluating the seriousness of the event and the safety risk created by the noncompliance.

Enter the Enforcement Decision Tool

To help the aviation safety inspector (ASI) and help provide consistency in addressing violations, the FAA has a national policy on compliance and enforcement. Policy options for addressing noncompliance include oral or written counseling, administrative action (e.g., warning notice or letter of correction), certificate suspensions, civil penalties, indefinite certificate suspensions pending compliance or demonstration of qualifications, certificate revocations, injunctions, and—in the worst cases—referrals for criminal prosecution.

The FAA's compliance and enforcement policy includes a practical tool that FAA inspectors must use to determine the action most appropriate for a given violation. This tool, known as the Enforcement Decision Tool (EDT), is built around the concept of mapping the safety risk posed by the violation and the type of conduct involved. Here's how it works.

Classify the Conduct

First, the investigating ASI categorizes a pilot's action or conduct according to the EDT's definitions. For example:

- The term *act* is something that a pilot did or did not do. "Act" may also include failure to act.
- *Careless conduct* means a slip, lapse, or mistake that was not intentional or reckless. Careless conduct can include failure to exercise ordinary, proper, or reasonable care or failure to recognize a risk. Missing an item on the checklist due to distraction is an example of careless conduct.
- *Reckless conduct* is a gross disregard for safety standards or norms for reasonably prudent conduct, considering the certification level of the individual and the type of operation involved. An example might be fuel exhaustion from improper preflight planning.
- *Intentional conduct* is a deliberate act in which the individual knowingly acted contrary to a regulation. Flying through St. Louis' Gateway Arch or under the Golden Gate Bridge would be characterized as intentional conduct.

Aviation Safety Reporting System (ASRS)

Administered by the National Aeronautics and Space Administration (NASA), the Aviation Safety Reporting System (ASRS) receives, processes, and analyzes incident reports voluntarily submitted by pilots, air traffic controllers, dispatchers, flight attendants, maintenance technicians, and others. ASRS now averages 827 reports per week and more than 3,307 reports per month. Reports submitted to ASRS may describe both unsafe occurrences and hazardous situations. A particular concern is the quality of human performance in the aviation system.

If an individual files an ASRS report on an incident that results in an FAA enforcement action, the ASRS filing can result in a waiver of imposition of penalty (i.e., prevent you from having to pay a civil penalty or serve a certificate suspension), if the violation was inadvertent and not deliberate, did not involve a lack of qualification or competency to hold a certificate, did not involve a criminal act or accident, and the ASRS report was filed within 10 days of the violation. An individual may file any number of ASRS reports, but may invoke the waiver of sanction only if there have not been any other violations within the past five years.

The public can download selected ASRS database report sets from the ASRS Web site at http://asrs.arc.nasa.gov/search/reportsets.html/. Direct access to the ASRS database is available at http://asrs.arc.nasa.gov/search.htm or through the FAA Aviation Safety Information Analysis and Sharing (ASIAS) Web site at http://www.asias.faa.gov/.

Determine the Risk

The second step is to assess the safety risk posed by the violation. For this step, the EDT gives the investigating ASI a risk assessment matrix (see below) to use and guidance for determining the severity (the worst credible outcome potentially caused by the hazard) and the likelihood that the severity level would be realized given the facts and circumstances of the case. A fuel exhaustion event, for instance, may have resulted in an off-airport landing without aircraft damage or injuries. However, the existence of a suitable landing area and other fortuitous circumstances does not change the fact that the noncompliance could have had a catastrophic impact.

Likelihood	**Severity**			
	Catastrophic	Critical	Marginal	Negligible
Frequent	*High*	*High*	*Moderate*	*Moderate*
Occasional	*High*	*Moderate*	*Moderate*	*Low*
Remote	*Moderate*	*Moderate*	*Low*	*Low*

Conduct + Risk = Enforcement Option

After categorizing the pilot's conduct and using the risk assessment matrix to determine whether the safety risk is high, moderate, or low, the investigating ASI then uses the EDT matrix (see below) to determine the appropriate enforcement action.

Conduct	**Safety Risk**		
	High	Moderate	Low
Intentional	*Legal*	*Legal*	*Legal*
Reckless	*Legal*	*Legal*	*Administrative*
Careless	*Remedial Training or Legal*	*Administrative*	*Administrative or Informal*

Your Pilot Record

In general, information related to an alleged violation is expunged from an individual's record within 90 days, if the investigation ends without an

enforcement action. Administrative actions against individuals for apparent violations committed in their individual capacities (as opposed to company capacity) are expunged two years after issuance of the administrative action. Certificate suspensions and civil penalties are expunged from the record after five years. Indefinite certificate suspensions for reexamination or proof of qualification are expunged one month after the airman successfully completes a reexamination or demonstrates qualifications. Records of certificate revocations are not expunged. (*Note: These timeframes are contingent upon no other legal enforcement actions pending against the same individual.*)

We hope that you never have to become personally acquainted with the EDT, but, if something occurs, please recognize that the enforcement system is designed to correct errors in the most appropriate way and, above all, to keep you flying safely.

Michael Lenz is a Program Analyst is Flight Standards Service's General Aviation and Commercial Division. He is a pilot.

Benefits of EDT

The benefits of the Enforcement Decision Tool include:

- Improving consistency and standardization in determining the most appropriate type of enforcement action, considering the facts and circumstances of the case
- Improving airman skills through the offer of remedial training for general aviation pilot and mechanic cases involving careless conduct with a high safety risk
- Improving operator systems for systems safety benefits through the use of letters of correction for certain business cases involving unintentional conduct with a high safety risk
- Endorsing verbal and written counseling as appropriate enforcement tools, documented in a database to support systems safety analysis and identify repeat acts.

Do You Have a Story?

The *FAA Aviation News* is looking for articles and article ideas for publications. Some suggested topics include:

Flying Skills: training; weather; decision making; maneuvers; technology, maintenance

Events: Sun 'n Fun, Oshkosh, Reno Air Races, Balloon Fiesta

Seasonal Tips: thunderstorm/icing avoidance, density altitude

Articles should be between 600 and 1,800 words.
FAA Aviation News reserves the right to edit articles for style, content, and length.

Federal Aviation Administration
For a complete set of submission guidelines, please send your e-mails to: AviationNews@faa.gov.

SUSAN PARSON

What Not to Burn

At a time when sky-high prices for avgas are keeping many general aviation (GA) pilots tethered to earth, you may find yourself looking more closely at airplanes with a supplemental-type certificate (STC) for unleaded automotive gas. Even with prices at the gas pump that leave auto drivers reeling and increase the cost of your commute to the airport, auto gas is still considerably cheaper than avgas.

You may also be interested in this option because installation of an auto fuel STC on a low compression (80/87 octane) engine is neither complicated nor expensive—no major modifications are needed. Even for the higher compression engines (e.g., Lycoming 0-360 and 0-320), installation of the STC may not require more than getting the right paperwork and placards.

Whether you already fly an aircraft with the auto gas STC or are just considering that possibility, there are a few things you need to know about operating with auto gas.

Can You Avoid Ethanol?

If you choose to buy, or if you already fly, an aircraft with a legitimate STC for auto gas, you will need to be sure that the auto gas you pump into your aircraft's fuel tanks does not contain ethanol. Gasoline containing ethanol, which is sometimes known as "gasohol," can damage aircraft fuel systems, decrease range, and significantly increase the tendency toward vapor lock. It also greatly increases the carburetor icing range. In addition, "gasohol" has an affinity for water and can pull enough moisture from inlet air on humid days to cause engine malfunctions. Consequently, you need to use avgas, unless you are certain that the auto gas you are pumping is free of ethanol.

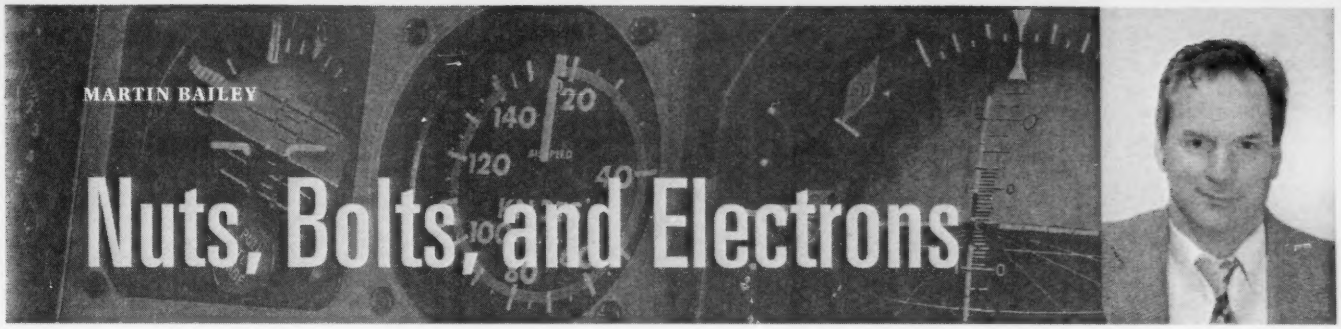
Therein lies a challenge. In some parts of the United States, it is nearly impossible to find non-ethanol blended gasoline. Although pumps at many filling stations now sport placards noting the presence of up to 10 percent ethanol in the gasoline being dispensed, it is still possible to find ethanol traces in non-blended gas, since tanker trucks may switch between ethanol blends and non-ethanol gasoline at any time. FAASafety Team (FAASTeam) notice number NOTC1221 (available at http://www.faasafety.gov/SPANS/notices_public.aspx?nid=1221&page=1) included information from a pilot who purchased ethanol-blended fuel from unlabeled pumps. For this reason, each STC for auto gas includes instructions for constructing an alcohol tester, and the STC holders also offer a reusable alcohol test kit.

Do You Have the STC?

According to the Experimental Aircraft Association (EAA), there have been several recent cases in which aircraft sellers have told prospective buyers that the aircraft has an STC for auto gas, but records kept by the two STC holders (EAA and Petersen Aviation) did not agree. As always, buyer beware! If you are considering the purchase of an aircraft that allegedly has the auto gas STC, it's a good idea to verify directly with EAA or Petersen Aviation.

If there is a legitimate STC, you should see placards (issued by EAA or Petersen) on the wings next to the fuel inlets. You should also find a complete set of STC-related documents, including an information packet, possibly with Field Information, Instructions, an Authorization Page, Airplane Flight Manual Supplement (required to stay in the aircraft), Instructions for Continued Airworthiness, STC for the airframe, and STC for the engine. You should also see Service Bulletins and other information.

Susan Parson is a Special Assistant in Flight Standards Service's General Aviation and Commercial Division. She is an active general aviation pilot and flight instructor.



MARTIN BAILEY

Nuts, Bolts, and Electrons

Ready or Not?

Editor's Note: This is the first article of a two part series on the use of the Maintenance "Personal Minimums" Checklist *by Light Sport Aircraft repairmen. Using this checklist will allow you to more confidently answer the question "Are you ready or not?" before performing any inspections or maintenance.*

When the Sport Pilot/Light Sport Aircraft rule was implemented in 2004, one of its many benefits was the creation of a new repairman certificate: Experimental Light Sport Aircraft (ELSA) repairman with an inspection rating and Special Light Sport Aircraft (SLSA) repairman with a maintenance rating. These ratings authorize owners, maintainers, and pilots of Light Sport Aircraft (LSA) to perform certain inspection and maintenance functions. As with any aviation privilege, exercising the privileges of these ratings means accepting responsibility for doing the job correctly. That, in turn, means ensuring that you have the knowledge, skills, and equipment you need for the task.

To help you determine your readiness for this responsibility, the FAA has developed a Personal Minimums Checklist for Maintenance. Already widely used in the maintenance community, this checklist can be a great resource to those with LSA repairman certificates. Here are the things you'll want to address before you start any given inspection or maintenance task:

Have I had the proper training?

Inspection Rating Training Requirements: Prior to applying for a repairman certificate with an inspection rating, the owner/pilot of an ELSA must complete a 16-hour training course in the same class of aircraft for which you seek inspection privileges.

Maintenance Rating Training Requirements: Prior to applying for a repairman certificate with a maintenance rating, an individual owner/pilot must complete the required training for a specific class of light-sport aircraft. The length of training varies with the class of aircraft for which you seek maintenance privileges. Also the repairman needs to check the manufacturer's requirements for additional task specific training.

Do I have the knowledge to perform the task?

Training is the necessary starting point, but you must also have knowledge and understanding of the task. For example, do you understand the manufacturer's instructions as set out in the maintenance manuals? Here's a real-life example. In some gyrocopters, there is a requirement for the cables to be reversed. If you don't have sufficient knowledge and understanding, you might install the cables incorrectly.

Have I performed the task previously?

Experience counts too, and, in fact, it is required. A repairman must demonstrate the ability to do the work correctly or perform the task under the direct supervision of an appropriately certificated, trained, rated, and experienced mechanic or repairman, before he or she can approve any ELSA or SLSA aircraft or part for return to service.

Have I researched the regulations to ensure compliance?

You will want to review Title 14 of the Code of Federal Regulations (14 CFR) parts 1, 21, 39, 43, 45, 65, 91, as well as industry-developed ASTM International consensus standards on topics, including, but not limited to, continued airworthiness requirements and inspection practices/techniques.

Am I mentally prepared to perform the task?

With today's fast-paced lifestyle, fatigue affects everyone's mental preparation to at least some degree. Recognizing fatigue is a key to ensuring you are prepared to do the work. Since fatigue is cumulative, you can mitigate the level of risk by simply getting some sleep—including naps. If naps are not in your schedule, know your limitations. Have someone check your work. Use a task

Federal Aviation Administration

Maintenance "Personal Minimums" Checklist

Before the task

- ☐ Have I had the proper training to support the job task?
- ☐ Do I have the knowledge to perform the task?
- ☐ Have I performed the task previously?
- ☐ Have I researched the regulations to ensure compliance?
- ☐ Am I mentally prepared to perform the task?
- ☐ Am I physically prepared to perform the task?
- ☐ Have I taken the proper safety precautions to perform the task?
- ☐ Do I have the technical data to perform the task?
- ☐ Do I have the proper tools and equipment to perform the task?
- ☐ Do I have the resources available to perform the task?

After the task

- ☐ Did I perform the job task to the best of my abillities?
- ☐ Was the job task performed to be equal to the original?
- ☐ Was the job task performed in accordance with the appropriate data?
- ☐ Did I use all the methods, techniques, and practices acceptable to the industry?
- ☐ Did I perform the job task without pressures, stress, and distractions?
- ☐ Did I reinspect my work or have someone inspect my work before return to service?
- ☐ Did I make the proper record entries for the work performed?
- ☐ Did I perform the operational checks after the work was completed?
- ☐ Am I willing to sign on the bottom line for the work performed?
- ☐ Am I willing to fly in the aircraft once it is approved for the return to service?

checklist to ensure that you haven't missed anything. Accept your limitations, and do critical work only when you are mentally and physically refreshed.

Am I physically prepared to perform the task?

Whether it is strength, flexibility, or vision, make sure you're physically prepared for the task. In my early years as a maintenance technician, I had no problem occupying a small aircraft compartment, and I could easily read numbers on electric wires. Things are different today. I can't get into a small compartment, and there is no way I can read those numbers without a magnifying glass.

Have I taken the proper safety precautions?

Make safety precautions a high priority, and don't put yourself in the position of saying "if only..." If only I had worn safety glasses, I would not have a metal sliver in my eye. If only I hadn't propped the airplane while it was parked on ice, I would not be asking you to sign my cast. If only I had bought a fire extinguisher, I would not be paying off the loan for a pile of molten metal.

Do I have the necessary technical data?

Always refer to appropriate maintenance manuals, inspection schedules, technical data, etc., while carrying out your maintenance tasks. No matter what, never rely on "...but I've done it a thousand times" to justify or replace current technical data. Always refer to the chapter dealing with standard maintenance procedures for a particular type of aircraft, engine, propeller, etc. Technical data should be readily accessible to your work area. Manuals that you don't read are of no value.

Do I have the proper tools and equipment to perform the task?

Maintenance of Light Sport Aircraft requires a variety of basic tools. These include many common items that you may already have, such as a drill, a tape measure, files, and wrenches. Other tools might include a reamer for cleaning paint out of holes. Specialized tools are normally listed in the aircraft's maintenance manual. Good tool safety practices require that you establish controls to account for tools. These may include shadow boards, foam cutouts in your toolbox, and a checklist.

Do I have the resources available to perform the task?

Before you start, ensure that you have the resources needed to complete the work. First, establish a list of general resources needed (consumables) such as oil, anti-freeze, safety wire, restraints, wire ties, small plastic bags for capturing small pieces, etc. Once you have all the general resources at hand, review the task and identify any additional special resources needed to complete the work. Not having all your resources available wastes time, and it also introduces risk when you have to stop a process for lack of proper resources

Using the Maintenance "Personal Minimums" Checklist will help you to more confidently answer the question, "Are you ready or not?" Be safe, and have fun!!

Martin Bailey is an Aviation Safety Inspector with Flight Standards Service's General Aviation and Avionics Branch.

DANIEL ROLLER, *EDITOR, AVIATION MAINTENANCE ALERTS*

Aviation Maintenance Alerts

The *Aviation Maintenance Alerts* (Advisory Circular 43.16A) is prepared from information submitted by those who operate and maintain civil aeronautical products. This procedure gives *Alerts'* readers prompt notice of conditions reported via a Malfunction or Defect Report (M or D) or a Service Difficulty Report (SDR). For more *Alerts*, go to www.faa.gov/aircraft/safety/aviation_maintenance/.

American Champion: 7FC; Cracked Wing Spar; ATA 5711

An A&P mechanic writes, "This aircraft was being modified to include the installation of wing spar inspection hole kits as supplied by DBA Rainbow Flying Service per STC number SA00527SE. A portion of the wing leading edge skin was removed and the wing spar was visually inspected, as specified in the installation instructions supplied with the STC. During this visual inspection, a crack was observed on the top surface of the right wing front spar *(P/N 5-146R)*. The crack originated at the inboard end of the aft plywood reinforcement plate. Said reinforcement plate is located on the aft side of the front spar, under the lift strut attachment fitting. The crack progressed outboard along the top surface of the spar at a slight forward angle—towards the forward plywood reinforcement plate. [It does not pass through...] bolt holes or nail holes. The aircraft maintenance records indicate a wing spar inspection had previously been completed in accordance with AD 2000-25-02. This aircraft showed no evidence of accident/incident wing damage subsequent to said inspection."
Part Total Time: 3,177.0 hours.

Beech: 58; Broken Rod-End on Nose Gear Retract Tube; ATA 3220

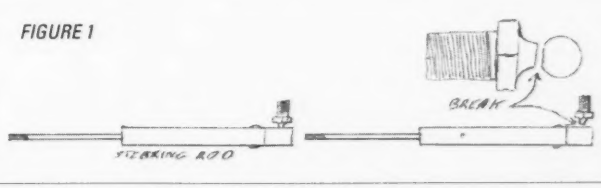
An unknown submitter provides the following description. "The nose gear would not lock down because of a broken rod-end (P/N ADNE5-323) on the nose gear retract rod. This rod-end connects the retract rod to the aft nose gear drag brace. [This defect] resulted in a nose gear-up landing."
Part Total Time: 2,000.0 hours (approximately).

Cessna: 172D; Broken Ball-End on Steering Rod; ATA 3250

(An Editor's note for the occasional, uninitiated reader: there are numerous apparent and real contradictions with many terms in all disciplines. The Beech entry references a broken "rod-end" on a retract "tube." This Cessna entry states a "...ball-end" on a steering "rod." Typically, convention has "tubes" as being hollow and "rods" as being solid or...less hollow. "Rod-end" can be a generic reference to any of various connection designs, allowing the tube or rod to transmit push-pull, torsion, rotary, and other forces. These terms are also frequently very specific and may be included with the formal part name as given by the manufacturer. Here the submitter references the typical push-pull tube specifically as a "rod" and demonstrates alternative intentions of the design. See the submitter's note in the second paragraph. Had it not been for the close proximity of these two descriptions, this arm-chair mechanic would never have considered how confusing tubes and rods could be to other readers.)

About this Cessna 172D, our anonymous mechanic writes, "The L/H side McFarlane steering rod's ball-end broke after 215.92 hours time since new (P/N MC543022-1). [The rod shown in figure 1...] attaches to the right rudder bar assembly (P/N

FIGURE 1



0411306-14). "[Failure] of this rod-end [ball] left the R/H steering rod as the only steering [input] for the nose gear. (Note: the 'rods' are not solid rods; they are designed to push and not pull—they slip inside when pulled.) It requires both rods to steer [the aircraft]; the R/H pedal and L/H rod will turn the nose to the right, and the L/H pedal and R/H rod will turn it to the left.

"On landing roll-out this plane began to drift to the left—the L/H rudder pedal was disconnected from the nose gear—it would not respond. [Airflow over the rudder had also diminished], causing the aircraft to drift more and more to the left with no response. As the pilot applied brakes, the aircraft continued its left drift off the runway, then the nose gear collapsed.

"This aircraft had 3,321.80 hours total time. The McFarland FAA/PMA replacement Cessna part only had 216.92 hours. The rod-end [ball] had been cracked for a period of time [prior to this failure as evidenced] by rust in the crack—the remaining metal looked crystallized (see figure 2).

FIGURE 2

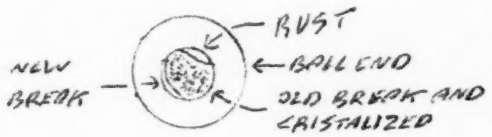


FIGURE 3

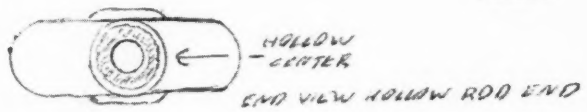
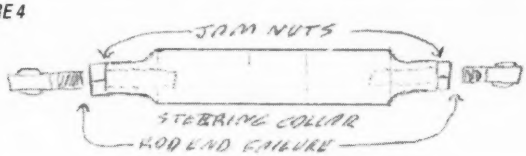


FIGURE 4



"After an extensive inspection of the broken parts, it was found that the Cessna rod-ends (P/N S1107-3) also had thread cracks with rust. These rod-ends thread into the nose gear steering collar (Cessna P/N 0743011-4). The ball-end attaches to the nose gear steering rod (either the Cessna P/N 0543022-1, or in this case the McFarlane P/N MC0543022-1). Rod-end (P/N S1107-3) is a hollow, threaded shaft style (see figure 3) that threads into the steering collar. Both the L/H and R/H rod-ends failed at the jam-nut (see figure 4). There was no entry [into the logbooks] on the replacement of the L/H or R/H rod-ends (P/N S1107-3).

"The aircraft had been in a [previous] accident where the plane undershot the landing area and nosed over in snow. There was damage and repairs to the wings—and to the belly skin immediately behind the nose gear and firewall. This Cessna (1986-88) was equipped with a Landis Nose Fork (Model PA28-206) using an 8.50 x 6 nose wheel, tire, and tube. After [the accident] it had the Cessna heavy duty nose fork and a 6.00 x 6 wheel, tire, and tube.

"The Cessna rod-ends (P/N S1107-3) in question have a total time in service of 3,321.80 hours. Cessna has no time life on the hollow rods; Beechcraft also uses them, but with a time life of 2,000 hours in service.

"My recommendations:

"Cessna Parts—replace the hollow rod-ends (P/N S1107-3) with a solid rod-end (P/N MS21151-3 or equivalent) by field approval, thereafter every 4,000 hours. If not—then replace the [original] hollow rod-ends every 2,000 hours or whenever damage to either the nose gear or aircraft could cause extra stress—even if there is no visible sign of damage.

"Landis Nose Fork (with the 8.50 x 6 wheel, tire, and tube installed)—replace the hollow rod-ends (P/N S1107-3) with a solid rod-end (P/N MS21151-3 or equivalent) by field approval, thereafter every 3,000 hours. If not—then replace the [original] hollow rod-ends every 1,500 hours or whenever damage to either the nose gear or aircraft could cause extra stress—even if there is no visible sign of damage."

A search of the FAA Service Difficulty Reporting System data base revealed at least three additional listings.

Thanks for the analysis effort and the terrific hand drawings —Alerts Editor

Part Total Time: 216.92 hours.

Piper: PA24-260; Failed Rudder Torque Tube; ATA 2720

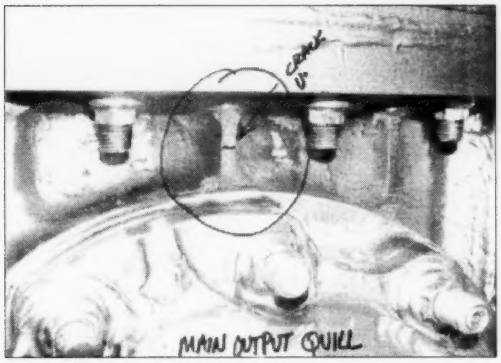
An unidentified submitter states, "During maintenance run-up and taxi check [after maintenance] the left rudder torque tube broke off *(P/N 2223900)*. It appeared to have been cracked for some time prior to failing during taxi. It is suggested the area be cleaned and inspected with a 10X magnifying glass. A borescope with a side view end could also be inserted in the tube to inspect, if from the inside.

If this had happened during landing and had broken at initial brake application, the aircraft would probably have departed the runway.

Part Total Time: 3,404.0 hours.

Bell: UH1F; Cracked Gearbox Web Casting; ATA 6320

A technician for a helicopter operator writes, "A crack was found on the main gear box [transmission] in the vertical cast webbing above the engine to transmission drive quill *(P/N204-040-016-005)*.



The military technical manual allows 1/4-inch radius/polish into the webbing. This crack has been found on three transmissions on other aircraft, with one penetrating the gear box [sufficiently] to leak fluid."

Part Total Time: (unknown).

Aviation Word Search

In past issues of the magazine we have presented you with quizzes to test your aviation knowledge. This time we have a different challenge. Using words that came from this issue's various articles, there are 15 words hidden in our word search puzzle. Good luck.

R	O	T	C	U	R	T	S	N	I	A	M	A	I	L
B	G	I	Y	T	E	L	O	N	A	H	T	E	T	H
X	C	N	T	D	I	D	J	L	C	E	X	R	Z	O
U	H	J	E	F	P	E	I	H	N	P	E	O	R	S
Q	E	N	F	O	R	C	E	M	E	N	T	M	A	N
P	K	I	A	C	E	F	P	R	S	D	C	E	N	E
X	R	I	S	N	B	A	I	E	F	R	B	D	J	Q
E	J	M	S	H	F	M	A	U	E	K	E	I	J	I
S	E	E	P	B	E	K	R	G	Q	O	X	C	W	T
E	C	N	A	N	E	T	N	I	A	M	L	A	Y	A
N	B	R	T	R	D	E	I	T	C	S	M	L	U	F
E	D	A	S	R	S	C	G	A	H	M	O	X	F	H
C	L	K	E	S	T	B	R	F	J	O	S	H	R	G
I	N	H	A	L	A	T	I	O	N	K	N	B	O	C
L	H	P	N	A	Z	P	D	I	F	E	T	C	A	L

Words

Aeromedical
Enforcement
Experimental
Fire
Inhalation
License
Passenger
Smoke
ASRS
Ethanol
Fatigue
Gasohol
Instructor
Maintenance
Safety

Answer key found on page 35

FAA Extends Duration of First- and Third-Class Medical Certificates

In the July 24, 2008, *Federal Register*, the Federal Aviation Administration (FAA) announced its final rule on the requirements and duration of medical certificates, and amendments to medical certification procedures. Pilots under 40 years of age are most affected by the changes to Title 14 Code of Federal Regulations (14 CFR) section 61.23.

A first-class medical certificate is required, when exercising airline transport pilot privileges, and at least a third-class medical certificate, when exercising private pilot privileges. Effective as of July 24, this rule extends the duration of first- and third-class medical certificates for certain individuals. For pilots under age 40, the first-class medical certificate is now valid for 12 months. For pilots over age 40, it remains six months for the first-class medical certificate. Third-class medical certificates are now valid for 60 months (5 years) for pilots under age 40 and 24 months (2 years) for pilots over age 40. The second-class medical certificate durations are unchanged, regardless of age. See the table below for more information.

In addition to extending the duration of certain medical certificates, this final rule also adopted amendments and editorial changes to the medical certification procedures. These are effective August 25, 2008. The intent of this action is to improve the efficiency of the medical certification program and the service provided to medical certificate applicants.

To view the final rule, visit http://edocket.access.gpo.gov/2008/pdf/E8-16911.pdf/.

If you hold	And on the date of examination for your most recent medical certificate you were	And you are conducting an operation requiring	Then your medical certificate expires, for that operation, at the end of the last day of the
(i) A first-class medical certificate.	(A) Under age 40	an airline transport pilot certificate	12th month after the month of the date of examination shown on the medical certificate.
	(B) Age 40 or older	an airline transport pilot certificate	6th month after the month of the date of examination shown on the medical certificate.
(ii) A second-class medical certificate.	A) Any age	a commercial pilot certificate or an air traffic control tower operator certificate.	12th month after the month of the date of examination shown on the medical certificate.
(iii) A third-class medical certificate.	(A) Under age 40	a recreational pilot certificate, a private pilot certificate, a flight instructor certificate (when acting as pilot in command or a required pilot flight crewmember in operations other than glider or balloon), a student pilot certificate, or a sport pilot certificate (when not using a U.S. driver's license as medical qualification).	60th month after the month of the date of examination shown on the medical certificate.
	(B) Age 40 or older	a recreational pilot certificate, a private pilot certificate, a flight instructor certificate (when acting as pilot in command or a required pilot flight crewmember in operations other than glider or balloon), a student pilot certificate, or a sport pilot certificate (when not using a U.S. driver's license as medical qualification).	24th month after the month of the date of examination shown on the medical certificate.

Flight Forum

Photo Questions

I have two questions that I hope you can answer. On page 2 of the March/April 2008 issue, there is a photo of a T-6 *Texan* doing a flyby. What I would like to know is what are those two high-wing aircraft shown just below the *Texan*? They are high-wing aircraft with one having red trim and one having blue trim (this one looks like it has a four-blade prop). Any idea what those aircraft are?

Question two concerns the airport shown on page 10 of the May/June 2008 issue. There is nothing to indicate its name or location. Can you supply that information?

In the future, can you name the airports shown in your articles for the benefit of your readers? Most aviation magazines, including *AOPA Pilot* do the same thing and I've had to contact them to find out the name of an airport/runway they show, but don't name. Thanks.

— John Murasso
via the Internet

We believe the aircraft pictured are Comp Airs. The one on the right is a Comp Air 10XL Experimental aircraft. Unfortunately, the one on the left is not as easy to identify. We think it may be a Comp Air 7.

As for your question regarding the picture used on Page 10 of the May/June issue, it was taken by an outside photographer. We usually do include the airport name with most photos, but we were unsure of the location at press time. After some research we believe it is Lake Tahoe Airport in South Lake Tahoe, California.

NAFI Participation

Just wondering why NAFI was not one of the groups that are part of the national steering committee on safety in the "Jumpseat" piece in the May/June 2008 issue?

I did find this issue had some excellent articles and was helpful to me as a full time flight instructor and published author.

Keep up the good work!

—Tom Gilmore, MCFI
via the Internet

Thanks for the catch. NAFI has certainly participated in the General Aviation Joint Steering Committee (GAJSC).

Kudos on Magazine

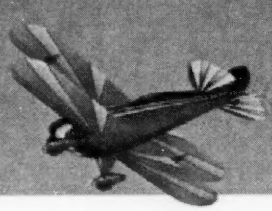
I am pleased to let you know that the improvement in content, and writing style, is very good.

—Harry L. Weatherford
FAA retired

Your message on the FAA Aviation News *was a real day-brightener; thank you for taking the time and effort to write! We've been working very hard on the items you specifically mentioned, and it's encouraging to hear that you think we're on the right track.*

FAA Aviation News welcomes comments. We may edit letters for style and/or length. If we have more than one letter on the same topic, we will select one representative letter to publish. Because of our publishing schedules, responses may not appear for several issues. We do not print anonymous letters, but we do withhold names or send personal replies upon request. Readers are reminded that questions dealing with immediate FAA operational issues should be referred to their local Flight Standards District Office or Air Traffic facility. Send letters to Editor, FAA Aviation News, *AFS-805, 800 Independence Avenue, SW, Washington, DC 20591, or FAX them to (202) 267-9463, or e-mail them to AviationNews@faa.gov.*

JAMES WILLIAMS



AV News

FAA Issues AD on Many Cessna Aircraft

The Federal Aviation Administration (FAA) is adopting a new Airworthiness Directive (AD) for certain Cessna Aircraft Company (Cessna) 172, 175, 180, 182, 185, 206, 207, 208, 210, and 303 series airplanes. This AD requires the inspection of the alternate static air source selector valve to assure that the part number identification placard does not obstruct the alternate static air source selector valve port. If the part number identification placard obstructs the port, this AD requires removing the placard, assuring that the port is unobstructed, and reporting to the FAA if obstruction is found. This AD results from reports of improper installation of the part number identification placard on the alternate static air source selector valve. The actions specified by this AD are intended to prevent erroneous indications from the altimeter, airspeed, and vertical speed indicators, which could cause the pilot to react to incorrect flight information and possibly result in loss of control.

This AD became effective on May 12, 2008. To read the full AD; see: http://edocket.access.gpo.gov/2008/pdf/E8-9719.pdf/.

FAA Proposes to Remove Polished Frost Regulations

The FAA is proposing to remove provisions in its regulations that allow for operations with "polished frost" (i.e., frost polished to make it smooth) on the wings of airplanes operated under Title 14 Code of Federal Regulations (14 CFR) parts 125, 135, and certain airplanes operated under part 91. The rule would increase safety by not allowing operations with polished frost, which the FAA has determined increases the risk of unsafe flight. To read the full Notice of Proposed Rulemaking (NPRM) see: http://edocket.access.gpo.gov/2008/pdf/E8-10246.pdf/.

FAA Issues AD on Many Beechcraft Bonanza, Baron, and Skipper Aircraft

The FAA adapted a new AD for certain Hawker Beechcraft Corporation F33 series and Models G33, V35B, A36, A36TC, B36TC, 95-B55, D55, E55, A56TC, 58, 58P, 58TC, G58, and 77 airplanes. This AD requires replacement of certain circuit breaker toggle switches with improved design circuit breaker toggle switches. This AD results from reports of certain circuit breaker toggle switches overheating. The FAA issued this AD to prevent failure of the circuit breaker toggle switch, which could result in smoke in the cockpit and the inability to turn off the switch.

The AD became effective on August 6, 2008. The AD is available at: http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgAD.nsf/0/DEE0757C20255E1A8625747A004CE45F?OpenDocument

FAA Issues Notification of New Policy Regarding 51% Rule

On July 15, 2008, the FAA issued its new policy regarding the certification of amateur-built aircraft. This action stems from the report issued by the Amateur-built Aviation Rulemaking Committee, which was published on February 15, 2008.

FAA is proposing that an amateur builder must fabricate a minimum of 20% of the aircraft and assemble a minimum of 20% of the aircraft. The amateur builder must still complete the major portion (more than 50%) of the fabrication and assembly, but this new policy sets minimums in terms of fabrication and assembly.

FAA is requesting comments on this new policy. For instructions to provide comments and to view the notice visit: http://edocket.access.gpo.gov/2008/pdf/E8-16093.pdf

Fatigue Management Symposium

The FAA's first Aviation Fatigue Management Symposium produced agreement on two major points: 1) As in other modes of transportation, fatigue can be a genuine factor affecting aviation operations, and 2) now is the time to do something about it.

The symposium, which ran from June 17 through 19, 2008, brought together 325 experts from industry, government, and academia to share the most current information on fatigue and discuss possible fatigue management strategies and best practices. The participants looked at issues affecting flight and cabin crews, air traffic controllers, technicians, mechanics, dispatchers, and ramp workers. The conference attendees generally agreed that fatigue mitigation must be based on scientific principles developed through enhanced data collection. They also emphasized the necessity for government and industry to develop a culture that does not penalize employees who excuse themselves from duty due to fatigue. The conferees recognized that incorporating fatigue risk management systems into everyday operations is the ultimate goal, but doing so will take innovation in addressing a myriad of regulatory issues.

The full statement can be found at: http://www.faa.gov/news/press_releases/news_story.cfm?newsId=10246

FAA Updates HEMS Fact Sheet

On June 30, 2008, the FAA updated its Fact Sheet covering Helicopter Emergency Medical Services (HEMS) in light of recent accidents. The FAA has been, and continues to be, committed to improving the safety of these operations. There have been several fatal HEMS accidents in 2008. The most recent collision of two HEMS helicopters near a hospital in Flagstaff, Arizona, on June 29, has focused public attention on the demanding operational environment of these aircraft.

The Fact Sheet covers some background on the industry, past FAA actions to improve safety, and future FAA initiatives. The Fact Sheet can be found at: http://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=6763

Emergency AD Issued on Eclipse 500 Aircraft

On June 12, 2008, the FAA issued an emergency Airworthiness Directive (AD) on all Eclipse 500 aircraft in response to an urgent recommendation from the National Transportation Safety Board (NTSB). The recommendation stemmed from a June 5, 2008, incident where an Eclipse 500 airplane, on approach to Chicago Midway Airport, experienced a failure that resulted in uncontrollable maximum power thrust from its two Pratt and Whitney Canada PW610F turbofan engines. After referencing the emergency procedures of the airplane's quick reference handbook, the pilots shut down one of the engines. However, following the shutdown of the engine, the other engine rolled back to idle power and continued to be unresponsive to the throttle. The pilots declared an emergency, were cleared to land on any runway, and were able to land the plane without injury to the pilots or passengers.

The AD requires new emergency and normal procedures to be inserted into the Aircraft Flight Manual (AFM) and for a pilot evaluation of the throttles with repair or replacement as necessary. The AD is effective immediately. For more information, go to http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgAD.nsf/0/CE4F900742D2987B8625746700025E60?OpenDocument

NTSB Chairman Lauds FAA for Quick Action on Eclipse 500

National Transportation Safety Board Chairman Mark V. Rosenker on June 13, 2008, applauded the FAA for its fast response to the urgent NTSB recommendations on the serious airworthiness issue involving the Eclipse 500.

"The quick FAA response to the urgent recommendations we issued could save lives," Rosenker said. "Additionally, the NTSB is looking forward to reviewing the results of the FAA-required inspections of these aircraft."

Answers to puzzle on page 31

R	O	T	C	U	R	T	S	N	I	a	m	A	i	l
b	g	i	Y	t	e	L	O	N	A	H	T	E	t	h
x	c	n	T	d	i	d	j	L	c	e	X	R	z	o
u	h	j	E	f	p	e	I	h	n	P	e	O	r	s
q	E	N	F	O	R	C	E	M	E	N	T	M	a	n
p	k	I	A	c	E	f	p	R	s	d	c	E	n	e
x	R	l	S	N	b	a	I	E	f	R	b	D	j	q
E	j	m	S	h	f	M	a	U	E	k	e	I	j	i
s	e	E	p	b	E	k	r	G	q	o	x	C	w	t
E	C	N	A	N	E	T	N	I	A	M	l	A	y	a
n	b	r	T	r	d	E	i	T	c	S	m	L	u	f
e	d	A	S	R	S	c	g	A	h	M	O	x	f	h
c	L	k	e	S	t	b	r	F	j	O	s	H	r	g
I	N	H	A	L	A	T	I	O	N	K	n	b	O	c
l	h	P	n	a	z	p	d	i	f	E	t	c	a	L

SUSAN PARSON

Editor's Runway

L-phabet Soup

Most of my friends and FAA colleagues know me as a flying fanatic, and I freely plead guilty to that charge. In addition to being a lot of fun, flying always challenges me to work harder, do better, and learn more in order to be prepared for whatever surprises the sky has in store.

A recent single-engine, single-pilot flight I made in Instrument Meteorological Conditions (IMC) highlighted the importance of keeping current in terms of both skill (proficiency) and knowledge—a point also made in several articles in this issue of *FAA Aviation News*. I regularly practice Instrument Flight Rules (IFR) procedures, but for many reasons, I try to avoid single-pilot IFR, especially in planes that lack an autopilot to help with basic aircraft control chores. In this case, however, a careful risk analysis convinced me that the weather hazards were well within the capabilities of my airplane and the comfort zone (personal minimums) of its pilot.

Aircraft Control

Since almost all of the 1.2-hour flight took place in IMC, the importance of proficiency in aircraft control, especially basic attitude instrument flying, was obvious. It really became clear when an unexpected traffic conflict led to the controller's unusually urgent instruction for a "HARD left turn NOW." Without having to think about it, I rolled into a coordinated level left turn to the newly-assigned heading. I was very grateful right then for all the practice, as well as for flight instructors who pushed for precision rather than letting me stop at "good enough to pass" Practical Test Standards (PTS) muster.

The Knowledge Component

This flight also underscored the vital importance of current knowledge, especially in this era of rapidly changing technology. When I got my instrument rating in 1994 (not *that* long ago), the menu of minimums was derived from a panoply of pretty standard procedures: ILS (Instrument Landing System), LOC (localizer), VOR (Very High Frequency Omnidirectional Range), and NDB (Non-Directional Beacon). The traditional alphabet soup has now morphed into what I call "L-phabet" soup, cooked up from GPS (Global Positioning Satellite) technology that is increasingly seasoned by the WAAS (Wide Area Augmentation System).

When I leafed through the available instrument approach procedures for my departure and destination airports, I found choices ranging from an ILS approach with LOC minimums, a RNAV (Area Navigation) (GPS) stand-alone approach with LNAV (Lateral Navigation) and circling minimums, and an RNAV (GPS) approach that offered LPV (Localizer Performance with Vertical Guidance), LNAV/VNAV (Vertical Navigation), LNAV, and circling minimums. When I loaded the assigned RNAV(GPS) approach into my airplane's moving map GPS/WAAS navigator, I saw that it included the notation "LNAV + V"—not something listed on the instrument approach chart, and emphatically not the same as the "LNAV/VNAV" minimums offered on some RNAV(GPS) charts.

In fact, LNAV + V is just one manufacturer's way of coding an RNAV(GPS) approach that includes a WAAS-derived *advisory* glide path. Alone in the meteorological soup, I was grateful that study and practice have provided enough servings of GPS/WAAS L-phabet soup to teach me the difference between a "real" glide path and advisory vertical guidance. If you haven't yet had the opportunity to try L-phabet soup, fear not: Future feature articles in the *FAA Aviation News* will give you a chance to sample the various flavors.

In the meantime, you can learn more from reading Chapter 5 of the FAA's *Instrument Procedures Handbook* (FAA-H-8261-1A), available online at www.faa.gov/library/manuals/aviation/instrument_procedures_handbook/. Another valuable resource is www.gps.faa.gov/.

Until next time, safe flights and happy landings!

Susan Parson is a Special Assistant in Flight Standards Service's General Aviation and Commercial Division. She is an active general aviation pilot and flight instructor.

LYNN McCLOUD

FAA Faces: Peter Rouse

For the Love of Small Planes

Ron Gallop photo

It is unlikely you will find FAA engineer Peter Rouse on a commercial air carrier. When he visits his mother in Longmont, Colorado, Rouse is more likely to fly his Beech *Baron* from Kansas City's Midwest National Air Center Airport. His love of small airplanes came from his parents, who both worked for Beech Aircraft. Rouse likes to think his parents helped build his *Baron*, as it was "born" a year after he was.

"I love little airplanes," says the 1,700-hour pilot, who is at his absolute happiest when piloting a Pitts *Special*. A Certificated Flight Instructor (CFI) with single-, multi-engine, and instrument privileges, aerobatic is Rouse's flying of choice. "I stumbled into it when I was doing upset recovery training," Rouse said, "and discovered I like it." He has flown aerobatics in competition and is an active member of the International Aerobatic Club.

Rouse takes the same approach to flying as he does to another one of his hobbies—Tae Kwon Do. Soon to get his 4th-degree black belt, he finds the biggest competition is "with yourself." Right now, for his flying skills, Rouse is challenging himself to always get better; whether it is on instrument approaches or being a better flight instructor.

Rouse flies his Beechcraft as often as he can, but, as you can see from the photo, he simply likes to be around small airplanes—whether in the cockpit turning the yoke or in the hangar turning a wrench. Rouse wants to know how things work, which is not that surprising for an engineer.

"While I don't have an Airframe and Powerplant (A&P) Certificate, I do perform owner-assisted maintenance. I work with friends who are A&P mechanics, and they have helped teach me the necessary skills." Rouse says firsthand experience on how small airplanes work helps him in his job at FAA's Small Airplane Directorate. In addition, his education, which includes a Master of Science (M.S.) degree in mechanical engineering, and his work experience as a civilian employee at the U.S. Army Aviation System Command, at Allied Signal Engines, and at Bombardier Flight Test, provided excellent preparation for his FAA role.

Translated into plain language, as an engineer in the Regulations and Policy Branch, his job involves determining how to safely put new propulsion-system technology into small airplanes. His duties include overseeing the certification standards of propulsion systems on certification projects ranging from Light Sport Aircraft, such as the American Legend *Cub*, to commuter category jets, such as the Sino Swearingen SJ30.

Rouse says his biggest challenge is keeping pace with the rapid development of technology. His greatest satisfaction is when a new airplane gets its type certificate. Also as part of his job, he is a frequent FAA representative at air shows, such as EAA AirVenture® Oshkosh. He likes doing this public outreach, since, in addition to liking his work with small airplanes, "I also enjoy the people who fly them."

In his 15 years of flying, Rouse has had five inflight emergencies, including inadvertent icing, an engine failure, and complete electrical failure. Each required skills, knowledge, and good decisionmaking. How did Rouse gain these abilities and keep from becoming a statistic?

"Good quality training," he replies. "I had great flight instructors who trained me for these situations. When I am instructing, I tell my students, 'Always fly like a professional. Good pilot skills have less to do with your hours, but have everything to do with your attitude.'"

Lynn McCloud is Special Assistant for Communications in Aviation Safety.

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